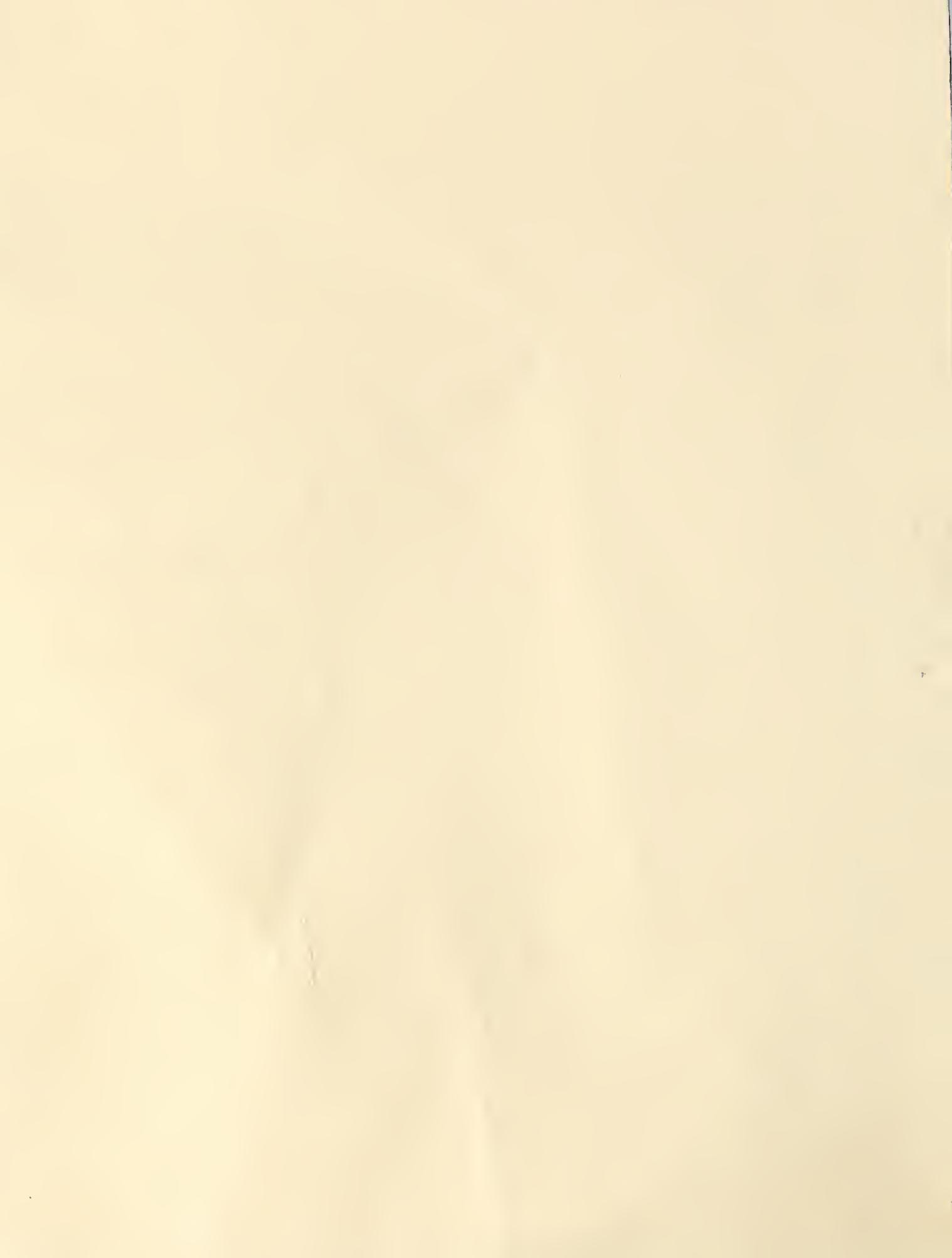


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ENVIRONMENTAL IMPACT STATEMENT
FOR
MANTACHIE, BOGUE FALA, AND BOGUE EUCUBA CREEKS WATERSHED
ITAWAMBA, LEE, AND MONROE COUNTIES, MISSISSIPPI

JUNE 1975

PREPARED BY
UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Jackson, Mississippi 39205

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Mantachie, Bogue Fala, and Bogue Eucuba Creeks Watershed
Itawamba, Lee, and Monroe Counties, Mississippi

FINAL ENVIRONMENTAL IMPACT STATEMENT

W. L. Heard
State Conservationist
Soil Conservation Service

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CATALOGING - PREP.

Sponsoring Local Organizations:

Mantachie, Bogue Fala, and Bogue Eucuba Master
Water Management District
Fulton, Mississippi 38843

Itawamba County Soil and Water Conservation District
Fulton, Mississippi 38843

Lee County Soil and Water Conservation District
Tupelo, Mississippi 38801

Monroe County Soil and Water Conservation District
Amory, Mississippi 38821

June 1975

PREPARED BY

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Jackson, Mississippi 39205

USDA ENVIRONMENTAL IMPACT STATEMENT

Mantachie, Bogue Fala, and Bogue Eucuba Creeks Watershed
Itawamba, Lee, and Monroe Counties
Mississippi

Prepared in Accordance with
Sec. 102(2) (C) of P.L. 91-190

Summary Sheet

- I. Final
- II. Soil Conservation Service
- III. Administrative
- IV. Brief description of project purpose and action: The project is for watershed protection, flood prevention, and recreation in Itawamba, Lee, and Monroe Counties, Mississippi, to be implemented under the authority of the Watershed Protection and Flood Prevention Act (PL-566, 83rd Congress, 68 Stat. 666), as amended.

The purpose of the project is to solve or reduce the land, water, and natural resource problems (erosion, sedimentation, flooding, low income, and lack of recreational facilities) by utilization of conservation land treatment, 12 floodwater retarding structures, and two multiple purpose structures.
- V. Favorable Environmental Effects: Annual floodwater damages will be reduced about 71 percent, annual sediment damages 81 percent, and gross erosion by 32 percent. The physical condition of the soils will be improved and the hydrologic processes of the forests will be enhanced. Water quality will be improved. An opportunity for recreational use will be provided to the general public with accommodations for 128,928 annual visitor days. Approximately 17,873 flood plain acres will be benefited by the project and the net income of these acres will be increased. The quality of wildlife habitat will be improved and the quantity of wildlife foods will be increased. The 983 acres of surface water created by structures will provide feeding and resting areas for waterfowl and for increased fisheries resources. The economy and social well-being of inhabitants of the watershed will be improved. Farm family income will be increased, production efficiency will be increased, and costs of production will be reduced.

Adverse Environmental Effects: Upland wildlife habitat will be permanently destroyed on the 983 acres inundated by the structures. An additional 225 acres of wildlife habitat will be temporarily disturbed in work areas adjacent to the impoundments. Reduction of flooding of bottom lands will reduce available feeding and resting areas for migratory waterfowl. Existing stream fisheries resources in the stream areas



that will be inundated will be incorporated with those of the respective structure pools. Forest fire hazard will be temporarily increased in the watershed. There will be a temporary increase in erosion and resulting stream turbidity during and shortly after periods of construction. Air and noise pollution will be experienced during periods of construction.

VI. Alternatives Considered: (1) Establish needed land treatment at an accelerated rate; (2) accelerated land treatment and channel work; (3) accelerated land treatment, a combination of floodwater retarding structures, multiple purpose structures with recreational facilities, and channel clearing; (4) land treatment, flood proofing, and converting present flood plain to uses less susceptible to flood damages; and (5) no project.

VII. Comments have been received from the following federal, state, and local agencies:

U. S. Department of the Army
U. S. Department of Health, Education and Welfare
U. S. Department of the Interior
U. S. Department of Transportation
Environmental Protection Agency
Governor, State of Mississippi
Federal State Programs, Office of the Governor

III. Draft statement received by CEQ on February 7, 1975.
Date



USDA SOIL CONSERVATION SERVICE
FINAL ENVIRONMENTAL IMPACT STATEMENT
for

The Mantachie, Bogue Fala, and Bogue Eucuba Creeks
Watershed Project

Itawamba, Lee, and Monroe Counties, Mississippi

Installation of this project constitutes an administrative action. Federal assistance will be provided under authority of Public Law 83-566, 83rd Congress, 68 Stat. 666, as amended.

SPONSORING LOCAL ORGANIZATIONS

Mantachie, Bogue Fala, and Bogue Eucuba Master Water Management District, the Itawamba County Soil and Water Conservation District, the Lee County Soil and Water Conservation District, and the Monroe County Soil and Water Conservation District.

PROJECT OBJECTIVES AND PURPOSES

To provide a higher degree of watershed protection, reduce erosion, reduce flooding, provide public water-based outdoor recreation, create conditions for better land use efficiency, and improve the economy.

PLANNED PROJECT 1/

Land Treatment - Land treatment measures were considered basic in formulating the project and are essential to its successful functioning. The project provides for technical assistance for accelerating the establishment of land treatment measures throughout the 113,585-acre watershed. During the project installation period, 19,756 acres will be adequately treated. These will consist of 8,200 acres of cropland, 5,100 acres of pasture and hayland, 4,100 acres of forest land, and 2,356 acres of critically eroding land. Other lands will receive partial treatment. These areas are in addition to the lands already adequately treated and the additional areas that will be treated after the project installation period.

The measures planned for cropland areas consist of conservation cropping systems, crop residue management, land smoothing, diversions, terraces, vegetative waterways, contour farming, drainage field ditches, and drainage mains and laterals. Measures planned for pasture and hayland consist of pasture planting, renovation and management, ponds, drainage field ditches, and drainage mains and laterals. Treatment of critical eroding lands consists of planting grasses and legumes, trees, and other adapted vegetation.

1/ All information and data, except as otherwise noted by reference to source, were collected during watershed planning investigations by the Soil Conservation Service, and Forest Service, U. S. Department of Agriculture.



Conservation cropping systems are the growing of crops in combination with needed cultural and management measures including crop rotation. Crop residue management (crop residue use) is the use of plant residues to protect cultivated fields during critical erosion periods. A diversion is a constructed watercourse with a supporting ridge on the lower side constructed across the slope so as to keep hill water from running directly down onto bottom land. A terrace is an earth embankment or ridge and channel constructed across the slope for the orderly removal of water from sloping cultivated lands. A vegetated waterway or outlet is a natural or constructed watercourse or outlet shaped or graded and established in suitable vegetation as needed for the safe disposal of runoff from a field, diversion, terrace or other structure. Contour farming is the farming of sloping cultivated land in such a way that plowing, preparing land, planting, and cultivating are done on the contour. A drainage field ditch is a graded ditch for collecting excess water within a field. Drainage mains and laterals are open drainage ditches constructed to a designed size and grade. Pasture planting, renovation, and management is establishing or reestablishing long-term stands of adapted species of perennial, biennial, or reseeding forage plants and the proper use and treatment of pastureland. A pond is a water impoundment made by constructing a dam or embankment or by excavating a pit or "dugout".

Forest land measures consist of open-field planting, under-planting, and improving hydrologic conditions for manipulation of stand composition. These consist of 700 acres of tree planting on critically eroding open land, 2,100 acres of tree planting in understocked stands, and 2,000 acres of stand manipulation for improvement of hydrologic conditions through release and improvement cuts. In addition, the cooperative FOREST FIRE Control Program will be accelerated on 78,574 acres.

The estimated 700 acres of critical area to be planted to trees will be planted to loblolly pine. These plantings will be scattered throughout the steeper, upland areas of the watershed. Site preparation will consist of brush dams as necessary and the establishment of love grass or other drought resistant grasses to hold the soils in place until the seedlings are established. The areas will be fertilized, fenced, and protected from fire.

The estimated 2,100 acres of tree planting in understocked stands will consist of planting of loblolly pine in most of the open areas of the scattered stands. These plantings will be in the upland areas and scattered throughout the watershed. The site preparation will vary according to the needs of the individual site, but in most cases will consist of planting the seedling on existing soils with no preparation. These plantings will be fenced where there is high grazing risk damage. These plantings will be protected from fire to reduce fire damage and so that normal plant succession can take place. It is anticipated in both the critical area plantings and the understocked stand plantings that other species such as blackberry vines, green briars, honeysuckle, native grasses, elm, hickory, sweet gum, black gum, red oak, and other native species will be present in the resultant stand.



Land treatment measures to be applied by private landowners that will improve wildlife and fishery habitat consist of 79 farm ponds, 100 acres of wildlife development, and 500 acres of wildlife preservation. Additional land treatment measures that will benefit wildlife will be the planting of 700 acres of gullies to various tree species.

Floodwater Retarding Structures - There are 12 floodwater retarding structures planned to be installed in this project, the primary purpose being to retard runoff and retain sediment. A floodwater retarding structure is a compacted homogenous earth filled dam with provisions for permanent storage of sediment and temporary retardation of runoff water from the drainage area above the structure. All earthen embankments will be vegetated. The structures in this plan are designed for release of water. Floodwaters are released at a predetermined rate compatible with project needs and goals downstream from the impoundments.

The proposed structures range in height from 15.0 to 33.4 feet; the sediment detention pools vary from 15 to 120 acres; and the retarding pools range from 34 to 333 acres.

The minimum acres of land rights committed to the installation of the floodwater retarding structures is approximately 1,927, of which about 65 percent is in crops and pastures and about 35 percent is forested.

There are approximately 633 acres in the sediment pools of the 12 floodwater retarding structures, of which about 418 acres are in crops and pastures and the remaining 215 acres are in mixed pine and hardwoods. The forest land will be cleared. The hydrologic cover condition of the sediment pool area in crops and pastures is poor and the cover condition of the woodland is fair. The land use and cover conditions are applicable to the areas planned for the emergency spillway and the dam site.

A breakdown of floodwater retarding structures by sub-watershed is as follows:

Mantachie Creek Sub-watershed - Five floodwater retarding structures are planned for the control of damaging floodwater and sediment. They will provide 4,847 acre feet of flood detention capacity. This is the equivalent of 4.34 inches of runoff from their combined drainage areas of 20.92 square miles or 1.31 inches of runoff from this sub-watershed. They will impound in detention storage from 3.82 to 4.81 inches from their respective drainage areas which total 30.07 percent of the sub-watershed. (See Multiple-Purpose Structure No. 11 for additional information.)

Bogue Fala Creek Sub-watershed - Six floodwater retarding structures are planned for the control of damaging floodwater and sediment. They will provide 3,126 acre feet of flood detention capacity. This is the equivalent of 4.38 inches of runoff from their combined drainage areas of 13.39 square miles or 1.05 inches of runoff from this sub-watershed. They will impound in detention storage from 3.30 to 4.74 inches from their respective drainage areas which total 24.06 percent of the sub-watershed. (See Multiple-Purpose Structure No. 5 for additional information.)

Bogue Eucuba Creek Sub-watershed - One floodwater retarding structure is planned in this sub-watershed for the control of damaging floodwater and sediment. It will provide 2,092 acre feet of flood detention capacity. This is the equivalent of 1.77 inches of runoff from its drainage area of 6.95 square miles. It will impound in detention storage 5.64 inches from its drainage area which is 31.41 percent of the sub-watershed.

The 12 floodwater retarding structures were designed for a 100-year sediment storage accumulation. All of the floodwater retarding structures were planned with single-stage risers. The elevation of the sediment pool was set at the elevation of the 50-year sediment storage in all of the structures except Nos. 4 and 7. Storage for sediment was made available in the sediment pool reserved for the second 50-year period for submerging 80 percent of the second 50-year period and aerating 10 percent of the first 50-year period. Storage for sediment was made available in the flood detention pools for aerating 10 percent of the first 50-year period and 20 percent of the second 50-year period of sediment accumulation.

In preparing the design for Structures Nos. 4 and 7, the storage of the 50-year sediment created unsatisfactory impoundment of water. At the request of the Watershed Sponsors and with the approval of the State Conservationist, the sediment storage was increased to 100-year storage, thereby creating satisfactory impoundment of water above these two structures.

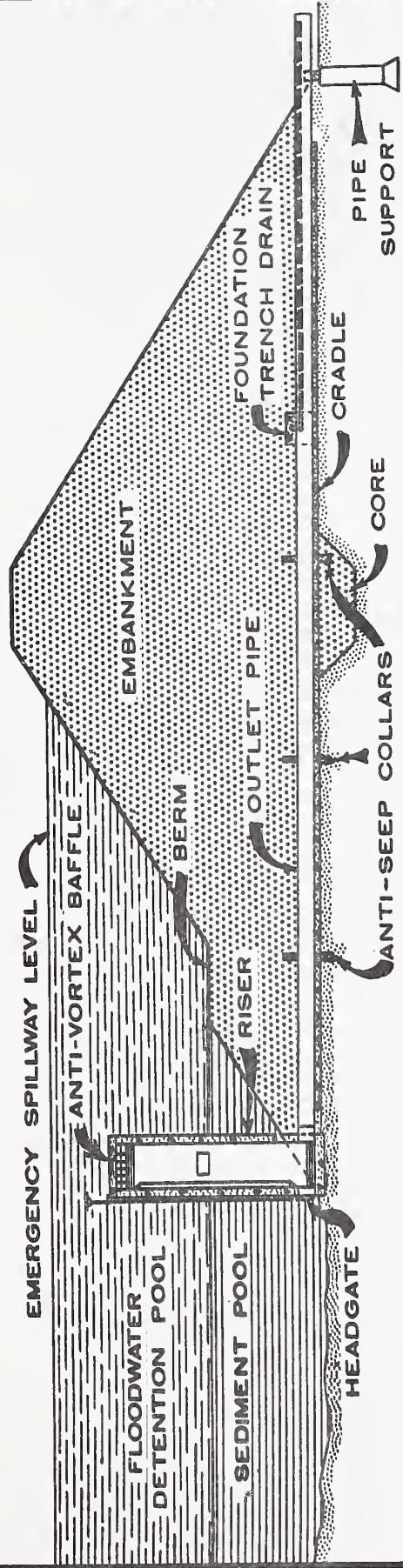
It is expected that the flood pool above Floodwater Retarding Structure No. 9 at maximum elevation will be approximately two feet deep on the fill of the proposed Natchez Trace Parkway. As this will be a very infrequent occurrence, no damages are anticipated to the Natchez Trace Parkway. There are county roads that will be affected by the flood or sediment pools of Floodwater Retarding Structures Nos. 1, 2, 4, 6, and 10. These roads will either be abandoned or raised to an elevation of at least three feet above the proposed maximum flood pool elevations.

There are no unusual foundation or soil conditions that will create problems in the construction of the floodwater retarding structures or emergency spillways. The emergency spillways will be vegetated.

There are no pipelines, gravel pits, or oil or gas wells that will be affected by the construction of the floodwater retarding structures.

Measures included in project planning to minimize the adverse effects to fish and wildlife habitat include the selection of sites which would create minimal disturbance of resource habitat, the stocking with game fish of water areas created by the floodwater retarding structures, the design of the structures to provide adequate sediment trapping capabilities, thereby providing better water quality to stream fishery resources below the structures and the revegetation of disturbed construction areas as soon as is reasonably possible.

A typical section of a floodwater retarding structure is shown in Figure 1.



SECTION OF A TYPICAL FLOODWATER RETARDING STRUCTURE

(TWO STAGE DROP INLET)

Figure 1.

Multiple-Purpose Structures - There are two multiple-purpose structures planned for this project (Nos. 5 and 11) and they are similar to floodwater retarding structures except they contain additional water storage for recreational purposes. Their heights are 32.6 and 35.5 feet respectively. Minimum land rights required for the recreational aspects associated with these structures amount to approximately 826 acres of land.

Bogue Fala Creek Sub-watershed - Multiple-Purpose Structure No. 5 is planned for the control of damaging water flow, sediment, and for added water storage for recreational purposes. This structure will provide 1,039 acre feet of floodwater detention volume and 1,905 acre feet of storage for recreational purposes. The detention capacity is the equivalent of 6.73 inches of runoff from its drainage area of 2.89 square miles or 0.35 inches of runoff from the sub-watershed. The drainage area of the multiple-purpose structure totals 5.20 percent of the sub-watershed.

The maximum depth of the sediment pool for Structure No. 5 (100-year submerged) will be 7.2 feet and the depth of the recreational pool above the sediment pool will be 14.5 feet. The maximum depth of the permanent pool will be 21.7 feet. The surface area of the recreational pool will be about 185 acres.

There are approximately 185 acres in the sediment and recreational pool of the multiple-purpose structure, of which about 35 acres are in pastures and the remaining 150 acres are in mixed pine and hardwoods. The forest land will be cleared. The hydrologic cover condition of the sediment pool area in pastures is fair and the cover condition of the woodland is fair. The land use and cover conditions are applicable to the areas planned for the emergency spillway and the dam site.

The approximate kinds and amounts of facilities to be installed in connection with Multiple-Purpose Structure No. 5 are itemized in Table 2B.

The approximate total area involved in land rights for Multiple-Purpose Structure No. 5 is 433 acres. These acres are estimated as follows: 72 acres for the sediment pool, 110 acres for the recreational pool, 57 acres for the flood pool, 109 acres for shoreline access, 80 acres for recreational facilities area, and 2 acres for access road.

Mantachie Creek Sub-watershed - Multiple-Purpose Structure No. 11 is planned for the control of damaging water flow, sediment, and for added water storage for recreational purposes. This structure will provide 778 acre feet of floodwater detention volume and 821 acre feet of storage for recreational purposes. The detention capacity is the equivalent of 5.76 inches of runoff from its drainage area of 2.53 square miles or 0.21 inches of runoff from the sub-watershed. The drainage area of the multiple-purpose structure totals 3.64 percent of the sub-watershed.

The maximum depth of the sediment pool for Structure No. 11 (100-year submerged) will be 9.0 feet and the depth of the recreational pool above the sediment will be 7.3 feet. The maximum depth of the permanent pool will be 16.3 feet. The surface area of the recreational pool will be about 165 acres.



There are approximately 165 acres in the sediment and recreational pool of the multiple-purpose structure, of which about 55 acres are in crops and pastures and the remaining 110 acres are in mixed pine and hardwoods. The hydrologic cover condition of the sediment pool area in crops and pastures is good and the cover condition of the woodland is poor. The land use and cover conditions are applicable to the areas planned for the emergency spillway and the dam site.

The approximate kinds and amounts of facilities to be installed in connection with Multiple-Purpose Structure No. 11 are itemized in Table 2C.

The approximate total area involved in land rights for Multiple-Purpose Structure No. 11 is 393 acres. These acres are estimated as follows: 63 acres for the sediment pool; 94 acres for the recreational pool; 74 acres for the flood pool; 72 acres for shoreline access; 80 acres for recreational facilities area; and 2 acres for access road.

Water level control devices (midlevel gates) will be installed in Multiple-Purpose Structures Nos. 5 and 11. These gates will be used for fishery and waterfowl management. They will also aid in the control of aquatic vegetation and for mosquito control purposes.

There are no roads that will be involved in the construction of the two multiple-purpose structures.

The state and local public health agency requirements will be met in the installation of these multiple-purpose structures. Sewage treatment plant effluent will be discharged downstream from the proposed structure reservoir spillways. All garbage and solid waste materials will be disposed of at a public disposal plant or area.

The plans and specifications for the water supply facilities and for the recreation area facilities will be reviewed and approved by the Mississippi State Board of Health prior to construction to assure proper design for health and physically handicapped use considerations. The Mississippi Air and Water Pollution Control Commission will be asked to review and approve the sewerage treatment facilities prior to construction.

Floodwater Retarding and Multiple-Purpose Structures - The 12 floodwater retarding structures and the two multiple-purpose structures will provide 11,882 acre feet of floodwater detention capacity. This is the equivalent of 4.77 inches of runoff from their combined drainage areas of 46.68 square miles or 1.51 inches of runoff from the entire watershed (does not include that portion of the watershed on which only land treatment measures are planned). They will impound in detention storage from 3.30 to 6.73 inches of runoff from their respective drainage areas which total 32 percent of the watershed. The designed life of the structures is 100 years. Approximately 51 percent of the sediment capacity in seven floodwater retarding structures and approximately 80 percent in the multiple-purpose structures and five floodwater retarding structures will initially store water. A low flow device will be installed to release cool water into the streams below the dams. They will be sized to release approximately 0.1 cubic feet per square mile of drainage area.

There is potential for incidental recreation use at some of the structure measure sites. Included among these are Structures Nos. 1, 2, 4, 8, and 9. However, since public access will not be provided, the Watershed Commissioners will discourage their use for such purposes because of lack of sanitary facilities, increased maintenance of flood prevention features, and safety precautions.

The water quality is expected to be adequate for the intended uses in this project.

A temporary seeding and fertilization program will be accomplished on all disturbed areas as construction progresses. When construction is completed a more intensive vegetation program will follow on all disturbed areas. Suitable permanent-type grasses will be established on disturbed areas and on newly constructed dams and borrow areas.

Artificial wood duck nesting boxes (10 per dam) will be installed in the upper reaches of each pond.

Installation Procedures - Structural Measures - Soil erosion, water, air, and noise pollution will be minimized by following SCS Engineering Memorandum-66 and applicable state guidelines related to erosion and pollution. Some of the measures which will be used to reduce erosion and sediment are: 1. Limiting the exposure of erodible soils to the shortest time reasonably possible, 2. use of temporary vegetation where exposure time of erodible soils will be excessive, 3. retardation of runoff by mechanical means where necessary, and 4. trapping sediment in debris basins. Some of the measures which will be used to reduce water, air, and noise pollution are: 1. Application of dust suppressors or water on haul roads and construction areas for dust control, 2. use of temporary bridges or culverts on running streams, 3. careful handling of chemicals, fuel, lubricants, sewage, etc., to prevent spillage, 4. maintenance of construction equipment engines, muffler and exhaust systems in good working condition, 5. regulation of burning at construction sites to times when wind and burning conditions are proper, and 6. location of access and haul roads away from homes as much as possible.

An archeological survey was conducted by the Mississippi Department of Archives and History in accordance with a contract with the Soil Conservation Service.

The survey revealed 14 sites in or near the project area. Thirteen of these sites will be affected by the construction of the floodwater retarding structures. All of the sites however, are small and have previously been destroyed by intensive agriculture. They are considered to be archeologically expendable.

According to the State Historical Preservation Officer, who is also the Director of the Mississippi Department of Archives and History, there are no National Register sites in the project area and none of the revealed sites are considered eligible for inclusion in the National Register of Historic Places.



The Reservoir Salvage Act of 1960 as amended (PL 93-291) is applicable to this project because several of the sediment pools surface areas and the recreation pool surface areas are larger than 40 acres. The Secretary of the Interior will be notified of this fact at the proper time.

If during the time of construction, any evidence is discovered that indicates the area may contain additional historical and archeological data (including relics and specimens), than is now known, construction will be halted and the Soil Conservation Service will notify the Secretary of Interior and the Mississippi Department of Archives and History in order that a survey may be made to ascertain the existence of data which should be preserved in the public interest.

Land Use Changes - It is anticipated that the installation of this project will result in a net loss of 3,072 acres of idle land and the net increase of 459 acres of cropland, 2,247 acres of grassland, and 366 acres of forest land.

Operation and Maintenance - Land treatment measures on private land will be established and maintained by landowners and operators under cooperative agreements with their Soil Conservation District. The establishment and maintenance of these measures will be the financial responsibility of the individual operators and landowners. Land treatment measures on public lands (Natchez Trace Parkway) are to be established and maintained by the administering agency in charge of these lands. Maintenance of critical area plantings will be financed by the Master Water Management District from its regular maintenance funds.

The forest land treatment measures will be maintained by the landowners and operators under agreement with the Itawamba, Lee, and Monroe Counties Soil Conservation Districts. The U. S. Forest Service, by and through the Mississippi Forestry Commission, will furnish the technical assistance necessary for establishing and maintaining the forest land treatment measures under the going Cooperative Forest Management Program. They will also continue to furnish fire protection under the Cooperative Forest Fire Control Program.

The Master Water Management District will assume responsibility to operate and maintain the floodwater retarding structures. Operation and maintenance funds will be secured through assessments as provided by the Mississippi House Bill 670, regular session 1960. The estimated annual cost for operating and maintaining the floodwater retarding structures is \$10,700.

The Master Water Management District will also assume the responsibility to operate and maintain Multiple Purpose Structures Nos. 5 and 11. A full-time caretaker will be provided during the summer months and on a part-time basis during the winter months at each structure. Use fees will be charged to recreational users at each structure and such fees will be limited to the amount needed to amortize the initial investment and to provide adequate operation, maintenance, and replacement of facilities. In the event that the use fees are found to be inadequate to cover the necessary costs, the

amount of the difference will be provided by the Master Water Management District. Operation and maintenance funds for the Master Water Management District will be secured through assessments as provided by Mississippi House Bill 670, regular session 1960. The estimated annual cost for operating and maintaining Multiple Purpose Structure No. 11 and the minimum basic facilities is \$30,300. The estimated annual cost for operating and maintaining Multiple Purpose Structure No. 5 and the minimum basic facilities is \$30,500.

Each year the Commissioners of the Master Water Management District will budget sufficient funds for operation and maintenance of the structural works of improvement. Maintenance will be accomplished through the use of contributed services in kind such as labor, equipment hire, and materials by the benefited landowners and operators in the watershed. These services will be arranged for by the Master Water Management District.

Access roads used during construction will be maintained as access roads for maintenance of the works of improvement.

Joint inspections will be made annually by the sponsors and the Soil Conservation Service employee responsible for operation and maintenance inspections on floodwater retarding structures, and the multiple-purpose structures. They will also make inspections after unusually severe storms and after the occurrences of any other unusual conditions that might adversely affect the structural measures. These inspections will continue for a period of three years following construction. Inspections after the third year will be made annually by the sponsors. They will prepare a report and send a copy to the Soil Conservation Service employee responsible for operation and maintenance inspections and follow-up. Where needed, the Soil Conservation Service employee may continue to provide assistance after the third year as determined by the State Conservationist.

For the floodwater retarding structures, items of inspection will include, but will not be limited to, the condition of the principal spillway, the earthfill, the emergency spillway, the vegetative cover, and other appurtenances installed as a part of the structures. For the release flow channel, items of inspection will include, but will not be limited to, the degree of scour, sediment deposition, bank erosion, obstructions to the flow caused by debris accumulation, and excessive brush and tree growth within the channel. The items of inspection listed are those most likely to require maintenance. The Soil Conservation Service will participate in operation and maintenance only to the extent of furnishing technical assistance to aid in inspection and technical guidance necessary.

Provisions will be made for free access of representatives of the sponsoring local organization and the Federal Government to inspect and provide maintenance for all structural measures at any time.



Detailed plans for operation and maintenance will be contained in the Watershed Protection Operation and Maintenance Agreement, and this agreement will be executed prior to issuing invitations to bid.

Project Costs - The project costs are shown in the following table:

Item	:	Cost (Dollars)		
		PL-566	Other	Total
Land Treatment		395,400	548,500	943,900
Structural Measures	3,003,770		1,097,880	4,101,650
Construction	(2,203,070)		(391,930)	(2,595,000)
Total Project	3,399,170		1,646,380	5,045,550

ENVIRONMENTAL SETTING

Physical Resources - The watershed is located in northeast Mississippi and contains 113,585 acres with 72,590 acres in the western part of Itawamba County, 38,050 acres in the eastern part of Lee County, and 2,945 acres in the northern part of Monroe County. The Mantachie Sub-watershed contains approximately 44,533 acres, the Bogue Fala Sub-watershed contains approximately 35,604 acres, the Bogue Eucuba Sub-watershed contains approximately 14,168 acres, and the area adjacent to the Tombigbee River between the Mantachie Sub-watershed and the Bogue Fala Sub-watershed contains approximately 19,280 acres.

The towns within the watershed boundary are Mantachie, Dorsey, and Mooreville. All three contain small rural populations. Tupelo (population 20,000) is located approximately eight miles west of the watershed, and Fulton (population 3,000), the county seat of Itawamba County, is located approximately three miles east of the watershed boundary. The population of Lee and Itawamba Counties has experienced past declines but has been increasing since 1960. The population of the watershed is about 9,700 and is considered to be all rural.

The watershed is located in the Tombigbee River Basin of the South Atlantic-Gulf Water Resource Region.

The South Atlantic-Gulf Water Resource Region, a land area of abundant natural resources, is located in the southeastern portion of the U. S. and is composed of a majority of the states of Virginia, North Carolina, South Carolina, Georgia, Alabama, Florida, and Mississippi. The topographic characteristics of the region vary from the mountainous areas of southern Virginia and western North Carolina to the flatlands of Florida and the coastal plain and prairie lands of Alabama and Mississippi. Temperatures and precipitation patterns of the region vary from the hot humid climate and abundant rainfall of the coastal areas to the more temperate climate of the high mountain areas.

The Tombigbee River Basin is located in the western part of the South Atlantic-Gulf Region. It drains approximately 11,000 square miles of land in eastern Mississippi and western Alabama. This area is roughly 85 miles wide and 210 miles long. The basin contains three major land resource areas. These are the Upper Coastal Plain, the Blacklands or Prairie, and the Interior Flatwoods.^{1/} Average rainfall for the basin area ranges from 50 to 55 inches per year. Most of the rainfall occurs from November through April. Average temperatures vary from 63 degrees in the north, to 65 in the south. Average length of the growing season is from 200 days in the northern part of the basin to 225 days in the south. The first killing frost usually occurs from the first to the middle of November, while the last is from the first to the latter part of March.

The watershed is located in the northern part of the Tombigbee River Basin and in the western part of the South Atlantic-Gulf Region. Because of its location,

^{1/} Water and Related Land Resources - Tombigbee River Basin, USDA, June 1964.

conditions and characteristics of the watershed are similar to those of that particular portion of the region and sub-region. Topography ranges from relatively flat and gently sloping in the prairie portions of the watershed to rugged relief in the hilly portions of the watershed. Climate has been classed as warm and humid with abundant rainfall.1/ Winters are mild and summers are hot and humid. Winter and spring are the wettest seasons, and fall is the driest season of the year.

Soil and Water Resource Problem Areas - Approximately 107,000 or 95 percent of the total land acreage of the watershed has either an erosion or a water problem. Of this acreage approximately 26,000 acres have water problems due to either flooding or poor internal drainage. These lands are located primarily in stream flood plain areas or are relatively flat upland areas which lack adequate surface and subsurface drainage. Approximately 80,000 acres of upland areas in the watershed have erosion problems of one kind or another. Approximately 700 acres are classed as critically eroded lands in the form of raw gullies. These areas have an annual sediment producing rate of from 200 to 300 tons per year. In addition, there are approximately 1,600 acres of cropland in the watershed with erosion rates of from 50 to 150 tons per acre per year. The remaining acreage has moderate sheet erosion problems.

Land - The watershed falls within two land resource areas, that of the Upper Coastal Plain, locally known as the Tombigbee River Hills and the Blackland Prairie or Black Belt.1/

In general the Tombigbee River Hills average about 100 feet in relief. They consist of a series of valleys and ridges that run in a southern and southeastern direction. The northeast and east facing slopes are generally short and steep and the southwest and west facing slopes are long and gently sloping. This area is for the most part underlain by sands, clays, and shales of the Selma and Eutaw geologic formations.

The Blackland Prairie Belt is underlain by chalk which belongs to the Mooreville member of the Selma formation. The topography is nearly level to rolling with a local relief of 40 to 50 feet.

The elevation of the watershed area as a whole ranges from 230 feet above mean sea level near the Tombigbee River to 505 feet along the northern rim of the watershed.2/

The soils in the watershed are in two Land Resource areas -- Coastal Plain and Blackland Prairie.

The Coastal Plain Soils are Boswell, Cahaba, Falkner, Kinston, Luverne, Mantachie, Mashulaville, Ora, Prentiss, Quitman, Ruston, Savannah, and Stough. The Blackland Prairie Soils are Catalpa, Leeper, Marietta, Oktibbeha, and Sumter.

1/ Soil Survey, Lee County, Mississippi, USDA, 1973.

2/ U. S. Geological Survey, Tupelo, Mississippi, Quadrangle, 1921.

Cahaba and Ruston are deep, well drained upland soils formed in thick beds of loamy material. They have moderate infiltration and are low in natural fertility. When properly managed they will produce all locally grown crops.

Mashulaville, Ora, Prentiss, Quitman, Savannah, and Stough are formed from thick, medium to moderately coarse textured coastal plain sediments. They have fragipans at depths of 16 to 24 inches.

Ora, Prentiss, and Savannah soils are moderately well drained. Quitman and Stough are somewhat poorly drained, and Mashulaville is poorly drained. Infiltration and permeability are moderate above the fragipan and slow in the fragipan. Except for Mashulaville, these soils are low in organic matter and have moderate natural fertility and when properly managed will produce all locally grown crops. Mashulaville soils are low in organic matter and natural fertility. They are wet in winter and droughty in summer but are suited to limited row crop production.

Luverne soils are clayey soils underlain by stratified beds of clay, sands, and shales. They are well drained and are low in organic matter and natural fertility. Permeability and infiltration are moderate. When properly managed they will produce most locally grown crops.

Boswell and Falkner are moderately well drained soils formed in thick beds of fine textured marine sediments. Boswell soils are clayey throughout and are low in organic matter and moderate in natural fertility. Permeability and infiltration are slow. Falkner soils are silty in the upper 16 to 24 inches and clayey below. Infiltration and permeability are moderate in the upper part and slow in the lower part of the soils. When properly managed, they will produce most locally grown crops.

Mantachie and Kinston are strongly acid loamy bottom land soils. They have formed in loamy alluvium from coastal plain soils. Mantachie soils are somewhat poorly drained and Kinston poorly drained. They are low in organic matter and moderate in natural fertility. Infiltration and permeability are moderate. If properly managed, after excess water is removed, those soils will produce all locally grown crops.

The Prairie soils include Oktibbeha, Sumter, Catalpa, Leeper, and Marietta. Oktibbeha and Sumter are upland soils formed from clay over calcareous marl and chalk. Oktibbeha is moderately well drained and acid in the upper part of the soil. The organic matter content is low and natural fertility moderate. Infiltration and permeability are slow. They will produce good yields of most pasture plants but

are not suited to row crops. Sumter soils are calcareous. They are moderate in natural fertility. Permeability and infiltration are slow. They will produce good yields of most pasture plants.

Catalpa, Leeper, and Marietta are slightly acid to alkaline Prairie bottom land soils. They have formed in alluvium from Prairie and Coastal Plain upland soils. Catalpa and Leeper are clayey and Marietta is loamy. They are somewhat poorly and moderately well drained. Infiltration and permeability are slow in Catalpa and Leeper and moderate in the Marietta soils. The organic matter is low to moderate and natural fertility is moderate. When properly managed these soils will produce all locally grown crops.

Climate - Lee County in which a large portion of the watershed lies has a warm humid climate and abundant rainfall. Average temperatures range from a low of about 34° in January to a high of 92° in July and August. High and low temperatures recorded in the area were 109° F in July 1930 and -14° F in January 1940. Relative humidity is 60 to 100 percent of saturation about 64 percent of the time yearly.

Rainfall averages about 53 inches per year. Winter and spring are the wettest seasons and fall is the driest. Rains in winter and spring may last for several days but they normally occur as brief showers along the leading edge of a cold mass of air. Rains in the summer come as local thundershowers that may bypass areas for days and weeks while providing other areas with adequate moisture for crop growth. The wettest year on record was 1932 when more than 75 inches of rain fell, and the driest was 1943 when a rainfall of 15.24 inches was recorded. October is usually the driest month of the year and March is the wettest.

Although tropical storms and hurricanes have never caused winds of gale or hurricane force in the area, they have caused heavy rains that have resulted in floods and ruined unharvested crops. During the past 45 years eight tornadoes, seven hailstorms, and 16 damaging thunderstorms have been recorded in the general vicinity of the watershed area.

Ground Water and Mineral Resources - Northeast Mississippi, of which the watershed is a part is underlain by several important aquifers of the Cretaceous system. Large quantities of water are available from the thick permeable aquifers which underlie the area.^{1/}

Most major groundwater development in the region is from aquifers in the Upper Cretaceous. The beds outcrop in a general north-south belt with younger beds exposed to the west and south. The beds dip gently at the rate of 20-35 feet per mile. The Cretaceous deposits are composed of unconsolidated sediments consisting of sand, silt, gravel, limestone and chalk or mixtures of these. Thicknesses of the deposits are up to 2,500 feet in portions of the region. The Upper Cretaceous deposits are divided into several formations or groups which include in ascending order the

^{1/} Water Resources of Mississippi, Miss. Geol., Eco., and Topo. Survey, Bulletin 113, 1970.



Tuscaloosa Group which is subdivided into the Massive sand (Lower Tuscaloosa), Coker (Middle Tuscaloosa), and Gordo (Upper Tuscaloosa), the Eutaw formation which includes the McShan; and the Selma Group which includes the Mooreville chalk, and the Owl Creek.

The aquifers in the Upper Cretaceous include the Tuscaloosa, McShan, and Eutaw, and the Coffee sand and Ripley of the Selma Group.

The Tuscaloosa group, which includes the Massive sand, Coker, and Gordo aquifers, is an important source of water throughout most of northeast Mississippi. This group is about 500 feet in thickness near its outcrop and underlies most of northeast Mississippi. Numerous municipal, industrial, and domestic wells are completed in these aquifers.

The Tuscaloosa group consists of coarse sand angular and rounded gravel and clay. The 100 to 200 foot thick sand and gravel deposits are capable of yielding 500 to 2,000 gpm to properly developed wells.1/

The Eutaw aquifer is the most widely used and has the greatest potential for ground water development throughout northeast Mississippi. The Eutaw overlies the Tuscaloosa Group. The thickness of the Eutaw, including the McShan formation, is up to 400 feet. The Eutaw sediments consist of sand, silt, and clay. Domestic and other small wells are completed in the Eutaw aquifer throughout much of the area. Large capacity wells for municipal and industrial use have been completed in the Eutaw at many locations. The average yield from this aquifer is about 250 to 500 gpm, although slightly greater yields are possible at some locations. A number of industrial and municipal wells are drilled through the Eutaw sand to reach the coarse sand and gravel of the underlying Tuscaloosa aquifers.

The Coffee sand is located above the Mooreville chalk and below the Demopolis chalk. It is an important aquifer in the more western portions of north-eastern Mississippi. It is exposed at the surface in a belt from central Lee County to the Tennessee line. Thickness of the Coffee sand in the subsurface averages about 250 feet. Sediments include sand, sandy clay, and calcareous sandstone. Potential yields from the Coffee sand are from 200-300 gpm maximum. This yield is low in comparison to other aquifers in the area. The Ripley formation which in the northern part of the area includes the McNairy sand member, contains important aquifers. Thickness of the Ripley is from 50 to 460 feet and includes the 200 foot thick McNairy member. The McNairy sand member is an excellent source of ground water in a number of counties in north Mississippi.

Water levels in northeast Mississippi are from flowing wells with 44 feet of head to as much as 250 feet below the land surface. Flowing wells are common along the Tombigbee River and its tributaries and many small diameter wells have been flowing for years in the lowlands of that river basin. 1/ 2/

1/ Water Resources of Mississippi, Miss. Geol., Eco., and Topo. Survey, Bulletin 113, 1970.

2/ Public and Industrial Water Supplies in a Part of North Mississippi, Miss. Geol. Survey, Bulletin No. 90, 1960.



Heavy pumpage in local industrial or municipal areas results in a cone of depression being developed in the water levels at certain locations.

Generally, the ground water in northeast Mississippi is of good quality for most purposes. Most of the water from the Cretaceous aquifers is soft and low in mineral content. Excessive iron is present in some of the aquifers, particularly the Tuscaloosa in the eastern part of the region near the outcrop.

Mineralization of the water increases with depth and southward along the strike. The Eutaw aquifer contains water too highly mineralized for domestic use along the southern and western periphery of the Northeastern Mississippi region. The lower Tuscaloosa (massive sand) yields water of the best quality throughout most of the region. Water from the Eutaw is good and is widely used for municipal, industrial, and domestic wells in the area.

Fluoride is present in the water from some of the Cretaceous aquifers. Locally the fluoride content may be excessive and is up to 7 ppm in some places.

There are no known oil, gas or other mineral deposits of commercial value within the watershed boundary.^{1/} However, gas, deposits of bentonite, ceramic clays, sand, and gravel of commercial value are being mined from other parts of surrounding land areas.^{2/} Market conditions and the depletion of resources elsewhere could renew interest in exploration for these minerals within the watershed.

Land use - The current land use of the watershed is about 13,901 acres of cropland (12 percent), 8,473 acres of pastureland (8 percent), 78,574 acres of forest land (69 percent), and 12,637 acres of other lands and miscellaneous uses (11 percent). Land use by capability classes is shown in the following table.

The capability classification^{3/} is a grouping of soils that shows, in a general way, how suitable they are for most kinds of farming. It is a practical grouping based on limitations of the soils, the risk of damage when they are used, and the way they respond to conservation practices. In

^{1/} Mississippi State Oil and Gas Board Bulletin, Vol. 73, No. 3, May 1973.

^{2/} Mississippi Geological, Economic, and Topographic Survey, Bulletin 112, Economic Minerals of Mississippi, 1970.

^{3/} Soil Survey, Lee County, Mississippi, USDA, Soil Conservation Service in cooperation with Mississippi Agricultural Experiment Station.



Capability Classes	Cropland	Forest Land	Pastureland	Other	Total	Percent of Watershed
Land Use by Capability Classes of the Erosion Problem Areas						
I	215			25	240	0.2
IIe	2,074	1,431	428	1,123	5,056	4.4
IIIe	1,973	3,991	1,232	169	7,365	6.5
IVe	1,187	6,186	2,300	889	10,562	9.3
VIe	408	15,439	1,917	848	18,612	16.4
VIIe	105	38,157	740	282	39,284	34.6
Land Use by Capability Classes of the Water Problem Areas						
IIw	6,908	4,810	1,207	1,198	14,123	12.4
IIIw	891	257	545	1,549	3,242	2.9
IVw	140	3,882	104	55	4,181	3.7
Vw	0	4,421	0	0	4,421	3.9
Miscellaneous (water, towns, roads, highways)					6,499	5.7
Total Watershed Area					113,585	100.0

in this system all kinds of soils are grouped at three levels--the capability class, subclass, and unit. The capability classes are designated by Roman numerals I through VIII, the subclasses are indicated by adding a small letter to the class numeral, and the unit is identified by numbers assigned locally. The subclasses indicate major kinds of limitations within the classes and the units indicate management needs.

Soils in Class I have no subclasses because the soils of this class have few limitations. Soils in Class II have some limitations that reduce the choice of plants or require moderate conservation practices. Soils in Class III have severe limitations that reduce the choice of plants and/or require special conservation practices. Class IV soils have very severe limitations that restrict the choice of plants and/or require very careful management. Class V soils are not erodible but have other limitations (impractical to remove) that limit their use largely to pasture, forest, or wildlife food and cover. Class VI soils have severe limitations that make them unsuitable for cultivation and that limit their use largely to pasture, forest, or wildlife food and cover. Class VII soils have very severe limitations that make them unsuitable for cultivation without major reclamation and restrict their use largely to pasture, forest, or wildlife food and cover. Class VIII soils and land forms have limitations that preclude their use for commercial plants and restrict their use to recreation, wildlife, water supply, or esthetic purposes (none in this watershed).

The subclass "e" shows that susceptibility to erosion or past erosion is the dominant problem, and subclass "w" shows that susceptibility to wetness or past wetness is the dominant problem.

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There are 80,879 acres of upland soils in the watershed that are susceptible to erosion or past erosion. There are 25,967 acres of bottom and terrace land that are susceptible to wetness or past wetness. There are 2,356 acres of the subclass "e" soils that are critically eroding and 17,873 acres of the subclass "w" soils that are subject to flooding.

Surface Water Resources - The watershed stream pattern consists of three major drainages. Mantachie and Bogue Fala Creeks begin in the eastern portion of Lee County and flow in a southeasterly direction to their confluence with Tombigbee River. Bogue Eucuba Creek begins in the eastern part of Lee County and flows in a southeasterly direction and joins Bogue Fala Creek approximately 1.5 miles upstream of the Tombigbee River.

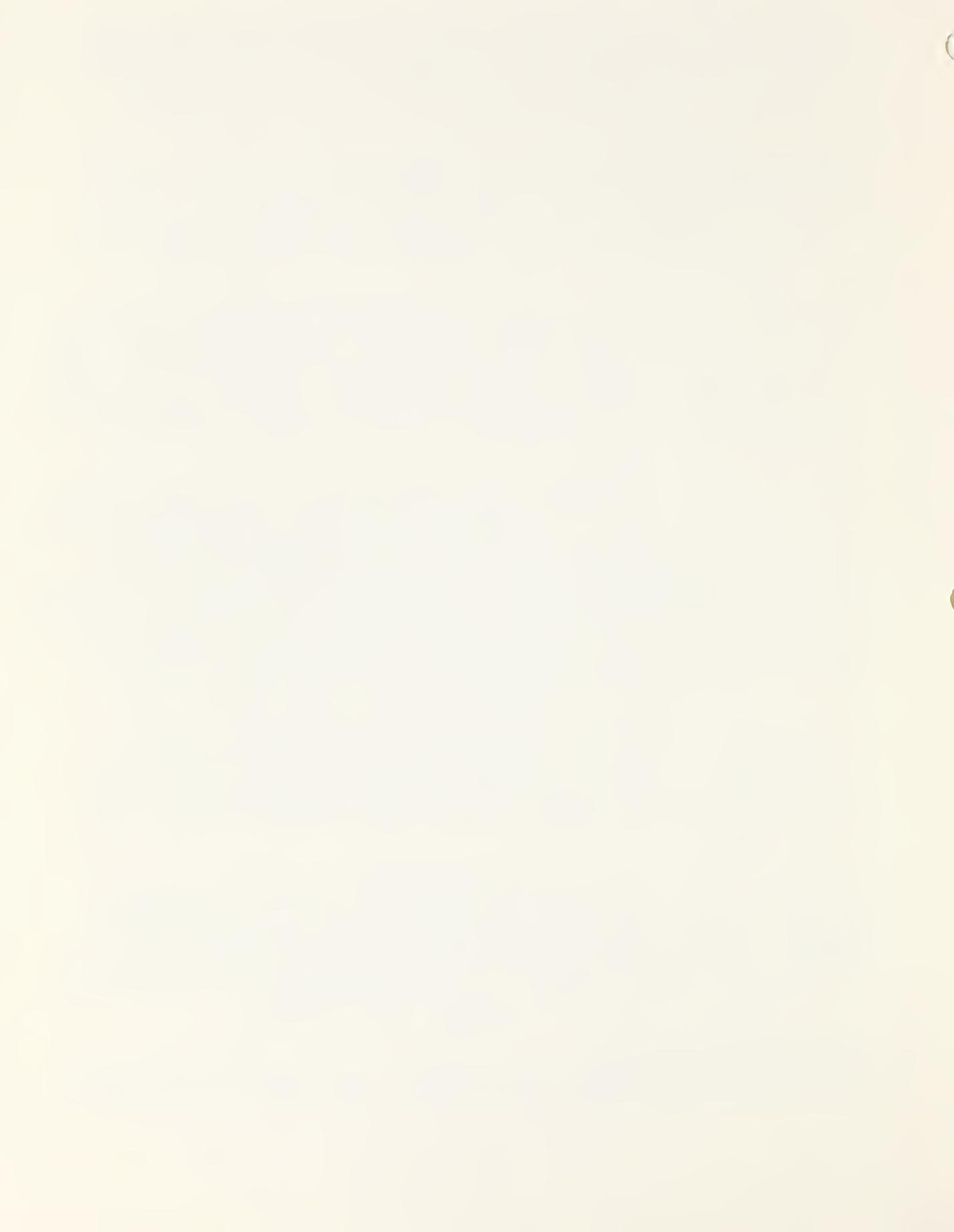
Approximately 17 miles of the lower portion of Main Mantachie, 22 miles of the lower portion of Bogue Fala, and 12 miles of the lower portion of the Bogue Eucuba channels are previously modified channels. Approximately 106 miles of tributaries of the three main streams have modified channels. The remaining streams throughout the watershed are in a natural state and have not been modified. Thirty-five miles of the lower portion of the Mantachie, Bogue Fala, and Bogue Eucuba channels were constructed by the Drainage Districts organized in 1913.

Mantachie Creek is intermittent in its upper portion down to approximately State Highway 371; from this point to its junction with the Tombigbee River, the stream is perennial. Bogue Fala and Bogue Eucuba are intermittent except in the extreme lower reaches. According to Regulation WPC-3-70, Air and Water Pollution Control Commission, State of Mississippi, all streams which have a 7-day, 10-year minimum flow equal to "o" are classified as drainage. Therefore, the upper portion of Mantachie, Bogue Fala, and Bogue Eucuba are classified as drainage. The lower portion of Mantachie, Bogue Fala, and Bogue Eucuba are classified as fish and wildlife. The tables on the following pages show the various stream characteristics.

Forest Resources - The forest types within the watershed are loblolly-shortleaf pine - 46 percent, shortleaf pine-oak - 17 percent, mixed bottom land hardwoods - 37 percent. These lands consist of pole size to small sawtimber size stands of trees. Except for the 488 acres of forest land within the Natchez Trace Parkway right-of-way, all forest land is in small private holdings.

Wetlands Resources - In the flood plain adjacent to the main streams are 17,873 acres of Type I wetlands as described in Circular-39, Wetlands of the United States, Fish and Wildlife Service, U. S. Department of the Interior. In addition there are two areas classed as "artificial wetlands". Both have been created by beavers. One is approximately 80 acres of marsh 5-7 years old on the south side of the old Mantachie Creek run and the other is approximately 15 acres of the old Bogue Fala Creek run.

Fish and Wildlife Resources - Deer, squirrel, and other indigenous wildlife species are present throughout the watershed. The flood plain, for the most part, is in row crops and pastures. Therefore, most forest game habitat is



STREAM CHARACTERISTICS

Stream and Reach	Bottom:Side Width:Slopes :Feet	Depth :Feet	Degree :of Obstruc?:Weg. :tion	In :Bank :Bottom :Material	Channel :Over Bank :Land Use	Immediate :of Sedi- ment de- :Stabl. :position:	Degree :Meander :1/ :position:	Type of :Degree of Channel:Beaver Dams
<u>Mantachie Creek</u> From the Tombigbee River to U.S. Hwy. #78	37-75:2:1&3:1	9-20	weeds: silt :brush: clay :sand	weeds: silt :brush: clay :trees	grasses :crops :trees	high :crops :trees	stable: minor :bends	M : P : minor
From U.S. Hwy #78 to the first road-crossing above the town of Mantachie	20-23:1.5:1	13-21	severe:brush: :trees: clay :sand	drift: silt :trees: clay :crops	grasses :crops :trees	moderate: caving :cavins	occ. : bends :bends	M : I : minor
From the first road-crossing above the town of Mantachie to FWRS #9	10-25:1:1-2:1:7-5:21	appre-:trees: :ciable:brush: :sand	drift: silt :trees: clay :crops	grasses :crops :trees	light :light :trees	slight: freq. :caving :light	freq. : bends :bends	M : I : minor
Tributaries below FWRS's 10, 11, 6, 7, 8	5-16:2.5:1	6-14	severe:trees: :brush: :trees	drift: silt :trees: clay :brush: :trees	grasses :crops :trees	light :light :trees	freq. : stable :bends :bends	M&N : I : minor
<u>Bogue Fala Creek</u> From the Tombigbee River to near the junction of the tributary containing FWRS #5	10-30:2:1	16-25	appre-:weeds: :ciable:brush: :clay	weeds: :brush: :clay	row :crops	moderate: stable :bends	minor :bends	M : P : appreciable
From the junction of the tributary below FWRS #5 to a point west of the community of Greenwood	10-22:1:1	10-14	severe:trees: :brush: :drift:	weeds: :brush: :clay	row :crops	light :light	fairly: :stable :light	M : P : minor
From west of Greenwood to U.S. Hwy. #78	10-12:1.5:1	9-11	severe:brush: :clay :trees :drift:	weeds: :brush: :clay :trees	light :light :light	fairly: freq. :stable :bends	N : I : minor	

STREAM CHARACTERISTICS (Cont'd)

Stream and Reach	:Bottom:Side	:Depth	:Degree	:In	:Channel	:Immediate	:Degree	:Degree	:Type of:
	:Width :Slopes	:Feet	:of	:Bank	:Bottom	:Over Bank	:of Sediment	:of	:Neander:Channel:Beaver Dams
	:feet								
	:Obstruc:Veg.								
	:Material								
	:Land Use								
	:Position:Stabl.								
<u>Bogue Fala Creek (Cont'd)</u>									
From U.S. Hwy. #73 to FWRS 2 & 3	:3-18:1:1-	:	6-13:	severe:weeds	:silt	:trees	:light	:	
	:2.5:1			:brush:	:clay				
	:								
	:								
	:								
<u>Bogue Fucuba Creek</u>									
From Bogue Fala Creek to State Hwy. #371	:15-30:2:1	:	15:	appre-:brush:	:silt	:crops	:		
				:ciable:drift:	:clay	:trees	:moderate:		
From State Hwy. #371 to FWRS #1	:7-17:1.5:1	:	12:	appre-:brush:	:silt	:crops	:light	:	
				:ciable:trees:	:clay				

1/ M - Man-made channel or previously modified channel or stream.

N - An unmodified, well defined natural channel or stream.

P - Perennial: Flows at all times except during extreme drought.

I - Intermittent: Continuous flow through some seasons of the year but little or no flow through other seasons.

confined to the upland areas. The narrow strips of woody vegetation along channels, streams, and field borders create excellent small game habitat in the cleared bottoms.

There are many small tributaries throughout the watershed. The flood plains of these tributaries are narrow and are farmed in such crops as corn and soybeans. These relatively narrow bottoms surrounded by forested uplands create excellent habitat for farm game such as quail, rabbit, and dove, as well as deer.

Waterfowl use soybean and corn fields when flooding conditions occur during the winter months. Two beaver ponds create wetland marshes that provide excellent fish and wildlife habitat for a variety of game and nongame species as well as nesting habitat for wood ducks.

Mantachie Creek has some pollution from the Town of Mantachie (population 250), and this pollution adversely affects water quality factors on the fish and wildlife resource during periods of prolonged droughts. Erosion in the upland areas has resulted in moderate siltation in some of the stream channels. This siltation has reduced the fishery resource by filling some of the deep holes which provided fish habitat.

The lower extremities of Mantachie and Bogue Fala Creeks provide some stream fishing opportunity and are available to the general public. Good catches of bream, bass, and catfish are reported during early spring months. Other fishing in the watershed is provided by privately-owned lakes and farm ponds. Also, there is some 25 miles of Tombigbee River that is available to the public for fishing.

There are no endangered species in the watershed. Potential habitat is available for species of the Southern Red Cockaded Woodpecker in a 488 acre area contained in the right-of-way of the Natchez Trace Parkway which crosses the upper portion of the watershed.

Economic Data - The watershed area is agricultural in nature and is classified as rural. Approximately 1,420 farms are located wholly or partially within the watershed and are primarily of the family farm type. The average farm size is approximately 150 acres with an estimated average value of \$35,000 including land and buildings.^{1/} Flood plain lands have an estimated value of \$200 per acre and watershed uplands are \$175 per acre. The major farm enterprises consist of row crops and livestock.

The forest land on the watershed averages 1,500 board feet per acre for pine sawtimber, and about 2½ cords of pine pulpwood. Hardwood volumes average about 800 board feet for sawtimber and two cords of pulpwood per acre. Total average value per acre for all forest products at present prices is \$120 per acre.

Average growth for all forest products will yield \$11.00 per acre per year.

^{1/} 1969 Census of Agriculture.

In 1969, about 63 percent of the farm operators worked off-farm part-time with about 49 percent working off-farm 100 or more days per year. In 1969, about 65 percent of the farms in Itawamba County and 61 percent of the farms in Lee County had gross incomes of less than \$2,500. The gross value of all farm products sold in the watershed area in 1969 averaged about \$5,800 per farm.^{1/}

Principal crops grown in the watershed and their average yields per acre are cotton (550 lbs.), corn (50 bu.), soybeans (25 bu.), and hay (2 tons). Pastures yield approximately 5 animal unit months of grazing per acre per year. The principal crops grown in the flood plain and their average yields per acre are cotton (750 lbs.), corn (75 bu.), soybeans (35 bu.), and hay (3 tons). Flood plain pastures yield about 7 animal unit months of grazing per acre.

The entire watershed area is in private ownership with the exception of 488 acres within the right-of-way area of the Natchez Trace Parkway in the northern portion of the watershed and the areas occupied by public roads and highways rights-of-way. Sixteenth Section lands are not public lands in this area.

Numerous county roads, State Highways 363 and 371, and U. S. Highway 78 provide easy access to nearby Fulton, Amory, and Tupelo. There are no railroads in the watershed.

A shirt manufacturing plant at Mantachie, a sawmill at Dorsey and other local merchants provide some off-farm employment to local watershed residents. Off-farm employment is also available in Fulton, about 3 miles east of the watershed, and Tupelo, about 7 miles west of the watershed.

The local churches throughout the watershed serve as centers for community and cultural activities for the watershed residents. There are elementary schools located in Dorsey, Mantachie, and Mooreville. Public high schools are located in Mantachie and Mooreville and Itawamba Junior College is located at Fulton.

The watershed is located in the Tombigbee River Valley Water Management District (a political sub-division of the State of Mississippi), the Tombigbee River Basin, the Appalachia Region, and the Northeast Mississippi Resource Conservation and Development Project. A Comprehensive Overall Development Program (OEDP) for Lee, Itawamba, and Monroe Counties has been prepared by their respective Rural Area Development Associations.

Recreational Data - Recreational resources within the watershed are limited to private lands and waters. Fishing in private ponds, the lower portion of Bogue Fala and Mantachie Creeks, the Tombigbee River, and hunting on private lands are the primary recreational pursuits. Pickwick Lake, a large TVA Reservoir offering full facilities, is 60 miles from the watershed, and Lake Lamar Bruce (330 acres), also offering full recreational facilities, is 20 miles from the watershed.

Other recreation areas in the vicinity of the proposed project include the Tombigbee State Park which is located approximately six miles southeast of Tupelo and the John Bell Williams Wildlife Management area which is located approximately ten miles north of Fulton, Mississippi. The State Park is made up of 822 acres of land and contains an 80 acre lake. Facilities offered to the public include fishing, boating, swimming, camping, and picnicking. Approximately 100,000 people make use of the park each year.

The Wildlife Management Area consists of approximately 11,000 acres of both upland and bottomland and is devoted largely to wildlife and timber management and public hunting. Limited facilities are offered for camping and hiking activities.

Two relatively large reservoirs (Bay Springs and Amory-Aberdeen) are proposed by the Corps of Engineers in connection with the Tombigbee River Waterway Project. They will be located, respectively, 30 miles to the northeast and 30 miles to the south of the watershed.

Archeological and Historical Resources - An archeological survey was conducted by the Mississippi Department of Archives and History in accordance with a contract with the Soil Conservation Service.

The survey revealed 14 sites in or near the project area. Thirteen of these sites will be affected by the construction of the floodwater retarding structures. All of the sites however, are small and have previously been destroyed by intensive agriculture. They are considered to be archeologically expendable.

According to the State Historical Preservation Officer, who is also the Director of the Mississippi Department of Archives and History, there are no National Register sites in the project area and none of the revealed sites are considered eligible for inclusion in the National Register of Historic Places.

The Natchez Trace, a historical old road from Natchez, Mississippi, to Nashville, Tennessee, crosses the upper portion of the watershed. There are 488 acres contained in the right-of-way of this uncompleted section of the Natchez Trace Parkway which is owned and operated by the National Park Service of the U. S. Department of the Interior.

Soil, Water and Plant Management Status - The trends in land use changes are from corn, pasture, and perennial grasses to soybean production. The Soil and Water Conservation Districts have assisted landowners and operators in establishing conservation land treatment measures. Important accomplishments are shown in the following table.

There are 396 soil and water conservation plans already prepared which cover about 65 percent of the watershed with about 60 percent of the planned conservation practices established. Soil surveys have been completed on the entire watershed. The degree to which committed factors of production (land, labor, and capital) are employed inefficiently on marginal uplands is moderate but is extensive on flood plain areas subject to frequent flooding.

Land Treatment Measures Established

Cropland

Conservation cropping systems	9,370 ac.
Terraces	30 mi.
Grassed waterways	65 ac.
Contour farming	4,721 ac.
Crop residue management	9,150 ac.
Mains and laterals	15 mi.
Drainage field ditches	22 mi.
Diversions	25 mi.

Grassland

Pasture Planting	8,038 ac.
Pasture management	1,725 ac.
Farm ponds	200 ac.
Critical area planting	225 ac.
Brush control	767 ac.
Mains and laterals	10 mi.
Drainage field ditches	20 mi.

Forest land

Tree planting	4,000 ac.
Forest land improvement	400 ac.
Firebreaks	10 mi.

Wildlife

Habitat management and development	3,000 ac.
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WATER AND RELATED LAND RESOURCE PROBLEMS

Land and Water Problems - There are 80,879 acres of land in the watershed which are classed as having an erosion problem. Of these, 700 acres are gullies and are producing sediment at a rate of 200 to 300 tons per acre per year. There are 1,656 acres of cropland with erosion rates varying from 50 to 150 tons per acre per year. The remaining 78,523 acres have a sheet erosion problem which is considered to be moderate. The soils in this area vary in organic matter, and natural fertility is low to moderate. However, vegetation can be established on all of these soils including the low fertility soils when properly treated and managed.

An estimated 25,967 acres of land in the watershed are classed as having a water problem. There are 17,873 benefited acres in the flood plain and 8,094 acres have poor internal drainage due to flat slopes and soil texture. The soils in this area are low in organic matter and vary from low to moderate in natural fertility.

Land use adjustments are needed in the watershed on the 2,356 acres that have a serious erosion problem. Of these acres, 1,656 are in cultivation and should be planted to some type of close-growing vegetation such as grasses or legumes. The treatment needs for the other 700 acres of critical area consist of planting trees. The remaining 78,523 acres of erosive land will need treatment on the cropland consisting of conservation cropping systems, crop residue management, land smoothing, diversions, terraces, vegetative waterways, contour farming, drainage field ditches, and mains and laterals. Grassland treatment needs include pasture planting, renovation, management, farm ponds, drainage field ditches, and mains and laterals. The forest land treatment needs consist of open field planting, under planting, and improving hydrologic conditions for manipulations of stand composition.

The economic conditions in the watershed are such that most of the land treatment measures will be established by the individual landowners and operators. However, cost-sharing will be needed to assist the low-income farm families in establishing these measures on their lands.

Floodwater Damage - The watershed flood plain areas as described above, consists of 17,873 benefited acres. This is the area inundated by a 24-hour 100-year frequency storm. Approximately 8.2 inches of rainfall are associated with a storm of this magnitude. A two-year 24-hour storm produces approximately 4.0 inches of rainfall and results in the flooding of about 5,200 acres. Flooding occurs on portions of the flood plain an average of four times each year.

Flood plain land use includes 57 percent cropland, 21 percent pastureland, and 22 percent forest land. These lands are owned by 740 landowners. The ownership ranges in size from one acre to 300 acres and the value is about \$200 per acre. There are 10 residences and two small businesses located in the flood plain areas.

The average annual floodwater damage is estimated to be \$278,800 to crops, pastures, and haylands; \$50,500 to roads and bridges and other fixed improvements \$46,200, and \$37,600 indirect damages.

Frequent spring and summer floods delay land preparation, planting, cultivation, and other management procedures. Floods that occur after normal planting time make repreparation and replanting necessary. The results are uneven stands, reduced crop yields, increased cost of production, and sometimes complete crop losses.

In addition to damage to crops, flooding results in damages to pastures, haylands, and fixed improvements such as public roads and bridges, fences, field ditches, and farm bridges in the watershed. The greatest proportion of average annual damage to crops, pastures, and haylands is caused by the smaller, more frequent spring and summer floods. Damages to fixed improvements are caused predominantly by the larger, less frequent winter and early spring floods.

Erosion Damage - Moderate sheet erosion occurs throughout the watershed and is considered to be the primary sediment source. Critical gully erosion is occurring on 700 acres located throughout the watershed, but the most of it is in the upland areas of Bogue Fala and Mantachie Creeks in Lee County. This produces 200-300 tons of sediment per acre per year. There is also critical erosion occurring on 1,656 acres scattered throughout the watershed varying in nature from small gullies to sheet and rill erosion due to cultivation of steep hill lands.

Average gross erosion rates in tons per acre per year by land use over the entire watershed are:

	<u>Upland</u>	<u>Bottom Land</u>
Crops	28	12
Pastures	8	3
Woodlands	6	1
Other	11	2

Sediment Damage - Deposition of sediment has occurred to a moderate degree in stream channels, road culverts, under bridges, on flood plains, and in the numerous small farm ponds scattered throughout the watershed. Sediment damages vary from slight (15%) to moderate (30%) on the 17,873 acres of flood plain lands and were evaluated monetarily. The estimated average annual damage due to sediment deposition is \$54,800.

The present sediment yield at the lower boundary of the Mantachie Sub-watershed is estimated to be 99,000 tons per year, or expressed in terms of sediment concentration in water, an average of 935 parts per million or mg/l. The sediment yield at the lower boundary of the Bogue Fala Sub-watershed is estimated to be 77,000 tons per year or an average concentration of 906 parts per million or mg/l. On the Bogue Eucuba Sub-watershed, the sediment yield is estimated to be 26,000 tons per year, or an average concentration of 736 parts per million or mg/l.

Drainage Problems - There are 8,094 acres that have poor internal drainage due to flat slopes and soil texture. The existing watershed channels

provide sufficient depth and capacity to meet internal drainage needs. However, additional on-farm drainage measures are needed.

Recreation Problems - Fishing and recreational areas available in the watershed are limited to private ponds, the lower portions of Mantachie and Bogue Fala Creeks, and the Tombigbee River. Therefore, there is a need to provide water storage for recreation together with recreational facilities for use by the general public. Studies have been made which show a need for recreation in the watershed area.

According to the Itawamba County Comprehensive Water and Sewer Plan, the 1960 population of Itawamba County was about 15,000. The projected population to 1990 is 17,000, an increase of about 13 percent.

According to the Lee County Comprehensive Water and Sewer Plan, the 1960 population of Lee County was 40,600. The projected population to 1990 is 69,500, an increase of about 71 percent. These projected population increases reflect a greater demand in future years for surface recreation waters.

Plant and Animal Resource Problems - Since the dredging of the channels by the Drainage Districts which were organized in 1913, there has been considerable land clearing in the bottom lands adjacent to the channels. This clearing has caused a permanent loss of habitat for deer and squirrel, but created better habitat for quail, rabbit, and dove. Erosion of the upland soils has caused sediment deposition in the stream channels. This, together with channel work, has caused damage to fish and fishery habitat in the extreme lower sections of the three main streams. There is a need for more fishery habitat, and there is also a need for additional wildlife food and cover plantings.

Water Quality Problems - All streams in the watershed are classified by the Air and Water Pollution Control Commission as "drainage" except the lower reaches where the flow becomes perennial and is classified as "fish and wildlife". The only water-quality problem that exists is turbidity caused by erosion and the small amount of pollution caused by the Town of Mantachie (population 250) to Mantachie Creek during periods of prolonged drought.

Economic and Social Problems - Floodwater and sediment damages average \$467,900 per year and have forced many of the farm operators to supplement their farm income by taking part-time or full-time jobs in nearby towns. In 1969 about 63 percent of the farm operators worked off-farm part time. About 49 percent worked 100 or more days per year off farm.

The farms which employed as much as one and one-half man-years of hired labor are in a small minority, and their operations comprise a very small percent of the benefited area as compared to the family-type farm operation.

The watershed is within an area designated by the U. S. Department of Commerce as qualified for assistance through the Public Works and Economic Development Act of 1965.



The following table shows income for Lee and Itawamba counties^{1/} by farm income groups and is considered to be representative of the watershed:

	Lee County		Itawamba County	
	1964	1969	1964	1969
Total Farms	1,797	1,264	1,489	1,094
Farms by Economic Class:				
Commercial Farms				
Class I, \$40,000 or more	181	137	13	44
Class II, \$20,000 - 39,999	56	52	58	40
Class III, \$10,000 - 19,999	48	46	67	49
Class IV, \$5,000 - 9,999	122	48	139	104
Class V, \$2,500 - 4,999	225	68	220	147
Class VI, \$50 - 2,499	201	47	293	182
Totals	833	398	790	566
Other Farms				
Part-Time	44	41	448	359
Part-Retirement	28	13	251	169
Totals	72	54	699	528
Percent of Total Farms with Less than \$2,500 Total Income	15%	1%	67%	65%
Value of All Farm Products Sold (average per farm)	5,966	10,887	3,932	5,862

Itawamba County contains 64 percent of the watershed, Lee County contains 33 percent, and Monroe County contains only 3 percent. However, the Itawamba County income statistics are more representative of the watershed and show that 67 percent of all farms had incomes of less than \$2,500 in 1964 and 65 percent had incomes of less than \$2,500 in 1969.^{2/}

In 1969 Itawamba County had \$2,023 per capita income annually (55 percent of the national average).^{3/}

In Itawamba County, 35.8 percent of the workers worked outside the county, whereas the average for Mississippi was 13.7 percent. From 1960 through 1970, there was a decline of 59.5 percent in the farm population.^{4/}

Elderly people contribute to the economic problem in the area.^{5/} This is illustrated by the following table:

Item	Itawamba County	Mississippi
Medium age - years	30.5	25.1
Persons over 65 - percent	11.8	10.1
Over 65 below low income level - percent	26.5	15.5

1/ 1969 Census of Agriculture.

2/ 1964 and 1969 Census of Agriculture.

3/ 1969 Census of Agriculture.

4/ County and City Data Book, 1972.

5/ Ibid

ENVIRONMENTAL IMPACTS

Conservation Land Treatment - The installation of planned land treatment measures will reduce erosion, flooding, and sedimentation of channels, streams, and ponds. Land treatment measures over the entire watershed will gradually reduce annual gross erosion by 32 percent. This will assist in providing sediment damage reduction benefits of \$44,600 annually. The reduction in gross erosion will correspondingly increase the efficiency of sediment basins and will reduce over bank sediment deposition within the project area. The combined land treatment and structural measures will eventually reduce the annual sediment damage about 81 percent for the entire watershed. Reduction of sediment rates will reduce sediment pollution of the fish and wildlife resource habitat and recreational waters and will result in better water quality.

The improvement and stabilization of vegetation cover on 2,356 acres of critically eroded land and the planting of trees on 700 more acres of open land will result in the improvement of wildlife habitat and improved physical conditions of the soil including increased soil aeration and water infiltration. Reduced overcutting, better fire protection, and forest management practices will increase timber growth and enhance forest hydrologic processes. Tree planting, stand improvement measures, and thinning will temporarily increase herbs, forbs, shrubs, and other wildlife foods and will reduce erosion and sediment by reducing overland runoff. The fire hazard will be temporarily increased on approximately 2,000 acres of forest lands due to buildup of material from planned timber thinning and stand improvement.

The addition of 79 farm ponds and the desilting basins will add fishery habitat and provide wildlife habitat around the edges of these water bodies. Additionally, it is expected that improved wildlife habitat will be created through the planting of wildlife food and cover areas. There are 100 acres of wildlife development and 500 acres of wildlife preservation planned which will benefit wildlife, especially upland species. The reduction in area, depth, and duration of winter flooding of bottom lands will reduce available feeding and resting waters for migratory waterfowl.

The other land treatment measures listed in the Planned Project section will affect wildlife resources either directly or indirectly through the supply of food, cover, and water or by the reduction of erosion, flooding, and sediment.

Structural Measures - The 12 floodwater retarding structures and two multiple purpose structures will reduce peak discharges and stages for storms at all magnitudes and frequencies, thereby reducing the amount of acres being flooded by these storms. Approximately 17,873 flood plain acres will be benefited by the structural measures. They represent 740 landowners with benefited acreage ranging up to 300 acres each. Floodwater damages to the fixed improvements, crops, and pastures will be reduced about 71 percent annually.

The recreation facilities associated with the two multiple purpose structures will accommodate 128,928 annual visitor days. The recreation facilities planned are for fishing, swimming, camping, picnicking, and other water-based recreational pursuits.

The 983 acres of surface water created by the 14 structures will provide feeding and resting areas for waterfowl. They will provide excellent potential for increased fisheries resources in the watershed area. Approximately 983 acres of upland wildlife habitat will be permanently destroyed as a result of inundation of land behind the structures and wildlife habitat will be temporarily disturbed on about 225 acres of work area adjacent to the impoundments. Existing stream fishery resources in the stream areas that will be inundated will be incorporated with those of the respective structure pool.

There will be a temporary increase in erosion and resulting stream turbidity during and shortly after periods of construction. Air and noise pollution will be experienced during periods of construction.

A bedload transport study indicates that some slight degradation can be expected in the existing channel reaches immediately downstream from the proposed floodwater retarding structures. The floodwater retarding structures, acting as sediment traps, would pass less turbid waters through them and the cleaner water would then tend to seek equilibrium with the channel materials. The bedload study indicates that this degradation will be very slight, if any, and will not significantly effect the channel reach.

Thirteen archeological sites will be affected by the construction of the floodwater retarding structures. All of the sites are small and have been previously destroyed by intensive agriculture. They are considered to be archeologically expendable.

There will be a weighted average loss of about \$67 per acre in value of crops, pastures, and timber caused by the inundation of the sediment pools of the floodwater retarding structures and a weighted average loss of about \$1.00 per acre caused by the limited use of flood pools. The weighted average loss per acre of the lands inundated by the recreational pools amounts to about \$38 per acre on the two multiple purpose structures.

Economic and Social - The watershed's economy will be improved through the \$240,800 annual increase in associated production cost for such items as seed, fertilizer, labor, and machinery. There will be an annual increase in the net income for the 17,873 acres of benefited flood plain land. The \$266,800 reduction in crop, pasture, and fixed improvement damage will boost the economy. Project construction will stimulate the general economy. Production costs will be reduced due to increased efficiency of production.

Local labor estimated to be used during the installation of the project will amount to 69,200 man-hours. In addition, local labor used for operation and maintenance will amount to 9,780 man-hours annually for the project life.



Based on findings reported in Agricultural Economics Technical Publication No. 13, Department of Agricultural Economics, Mississippi Agricultural and Forestry Experiment Station, Mississippi State, Mississippi, the annual increase in net income that will accrue due to the project will increase the employment in the area by 187 man-years. The increase in man-years used in the transportation, wholesale and retail, and service sector will amount to eight. Therefore, permanent employment due to the project will amount to 195 jobs.

The average gross income per farm in the watershed will be increased by \$373 annually and thereby aid in the retention and distribution of population in the watershed. The increased income will improve the quality of living and enhance the possibilities for farmers to stay in the farming business, thus reducing migration to cities. This improved economy will increase the tax base. The reduction of \$64,000 damages annually to roads, bridges, and other fixed improvements will reduce the expenditure of tax money for their repair. This will give the local units of government the option of reducing the tax rate or keeping the same rate and providing better services such as better roads, improved schools, assistance to the aging, and upgrading health services.

The recreational structures and facilities will provide an opportunity to meet the water-based recreational and social needs within the watershed area.

There will be little or no impact on existing recreational resources of surrounding areas as present resources do not adequately supply existing recreational demands.

The commitment of mineral resources to be used for construction, inundated by reservoirs, or otherwise pre-empted by project measures will have only a slight impact for this project. This would hold true even if the market conditions and the depletion of these resources elsewhere could renew interest in exploration. With modern techniques in the exploration and exploitation field (and in particular to off-set drilling), this project will have no impact on exploration for, or extraction of oil and gas resources which may exist in the immediate area.

FAVORABLE ENVIRONMENTAL EFFECTS

- A. Annual gross erosion will be reduced by 32 percent and sediment damage will be reduced 81 percent annually for the entire watershed.
- B. The quality of water will be improved.
- C. The quality of wildlife habitat will be improved and the quantity of wildlife foods will be increased.
- D. The physical condition of the soils will be improved.
- E. The hydrologic processes of the forests will be enhanced.
- F. Approximately 17,873 flood plain acres will be benefited and the net income of these acres will be increased.
- G. Floodwater damages to fixed improvements, crops, and pastures will be reduced about 71 percent annually.
- H. The opportunity for recreational use will be provided to the general public with accommodations for 128,928 annual visitor days.
- I. The 983 acres of surface water created will provide feeding and resting areas for waterfowl and for increased fisheries resources.
- J. The economy and social well being of inhabitants of the watershed will be improved.
- K. Farm family incomes will be increased.
- L. Production efficiency will be increased and costs of production will be reduced.

ADVERSE ENVIRONMENTAL EFFECTS

- A. The upland wildlife habitat will be permanently destroyed on the 983 acres inundated by the structures.
- B. Wildlife habitat will be temporarily disturbed on about 225 acres of work areas adjacent to the impoundments.
- C. Forest fire hazard will be increased temporarily in the watershed.
- D. Reduction of flooding of bottom lands will reduce available feeding and resting areas for migratory waterfowl.
- E. Existing stream fisheries resources in the stream areas that will be inundated will be incorporated with those of the respective structure pools.
- F. There will be a temporary increase in erosion and resulting stream turbidity during and shortly after periods of construction.
- G. Air and noise pollution will be experienced during periods of construction.
- H. Some slight degradation can be expected in the existing channel reaches immediately downstream from the proposed floodwater retarding structures.

ALTERNATIVES

Several alternatives were studied in the project evaluation process. The more reasonable ones were evaluated to the point of determining cost and impacts. Those considered were: (1) establishing needed land treatment at an accelerated rate; (2) accelerated land treatment and channel work; (3) accelerated land treatment, a combination of floodwater retarding structures, multiple purpose structures with recreation facilities, and channel clearing; (4) land treatment, flood proofing, and converting present flood plain to uses less susceptible to flood damages; and (5) no project.

The first alternative "establishing needed land treatment at an accelerated rate" would require installation of those measures described under the heading of "Planned Project - Land Treatment". This alternative would eliminate those adverse impacts associated with the installation of planned structural measures. Gross erosion and associated sedimentation would be reduced 32 percent. Fish and wildlife habitat would be improved by the installation of and stocking of ponds, vegetating eroding areas, wildlife habitat improvement and preservation, and multiple use and management of forest. Floodwater damages would be reduced about 5 percent. The cost of this alternate was estimated to be about \$943,900. About \$353,210 of flood damage would still occur annually.

A second alternative considered was accelerated land treatment and channel work. This alternate would retain the favorable impacts as listed for the alternate of needed land treatment, would effect about a 40 percent reduction in floodwater damages, and would eliminate the commitment of forest and open land to dams and pools associated with the proposed project. This alternate would require constructed channels of increasing size as one proceeds downstream resulting in near total destruction of stream fisheries resources and major clearing of hardwood timber along channel rights-of-way. This alternate would increase flood stages downstream of the channel construction areas due to concentration of flood flow. This alternative was estimated to cost about \$1,843,900.

Another alternative consisted of accelerated land treatment, a combination of nine floodwater retarding structures, two multiple purpose structures with recreation facilities and approximately 6 miles of channel clearing. Favorable impacts associated with land treatment measures would be retained. This alternate would eliminate the extensive channel work and resultant loss of bottom land woody vegetation and associated wildlife habitat. Minor disturbance would be created in water quality resulting from sediment disturbance during channel work periods. This alternate would create a reduction of upland wildlife habitat on approximately 910 acres of forested land and open land. Gross erosion would be reduced by about 32 percent and sedimentation would be reduced approximately 50 percent. Fish and wildlife habitat would be improved through the creation of 906 acres of surface water behind the floodwater retarding and multiple purpose structures but would result in disturbance of fisheries resources in the 6 miles of channel to be cleared. Floodwater and sediment damages would be reduced by about 68 percent. The cost of this program was estimated to be about \$3,900,000.



The fourth alternate consisted of land treatment, flood proofing, and converting present agricultural flood plain to uses less susceptible to flood damages, would retain the favorable impacts of the land treatment alone alternate and would eliminate all of the adverse impacts previously described for structural measures. In order to flood proof the existing buildings, roads, highways, and other property, it would be necessary to raise their usable levels above the elevation of the 100-year frequency storm. About 10 houses, two small businesses, 20 miles of county gravel roads, 13 miles of county and/or state-aid paved roads, 3 miles of U. S. Highway, and a number of electric, telephone, and water utility lines would be affected. The conversion of present agricultural flood plain to uses less susceptible to flood damages would require changed land use on about 11,600 acres of land now used for growing crops and improved pastures. This conversion would result in the loss of agricultural income of about \$1,067,200 per year. The estimated cost of this alternate would be about \$4,168,750.

The fifth alternate, "no project", would eliminate all of the adverse impacts associated with the planned project. Flooding would continue on 17,873 acres of bottom land causing \$467,900 of damages annually. None of the existing problems in the watershed would be lessened or eliminated. If this alternate was selected, there would be \$607,100 of estimated net average annual benefits foregone.



SHORT-TERM VS. LONG-TERM USE OF RESOURCES

Most of the land in the watershed is primarily devoted to agricultural production and is not expected to change to another use. The project will reduce erosion, sedimentation, and flooding and will provide recreational opportunity for the immediate and distant future. The plan provides an adequate level of protection for the present and projected use of the benefited land. Current productivity will be maintained and improved. The installation of the plan will permit more efficient use of the land, greater economic return to the landowner, and at the same time preserve the land for use of future generations. Even after the designed life of the project of 100 years, the project will still be effective in conserving the land and water resources of the watershed.

There has been one PL-566 project completed in the Tombigbee River Basin. At the present time, plans have been completed and construction is being carried on or is authorized for six additional PL-566 projects, and plans are now being prepared on two PL-566 projects. This plan, when installed, will have minor downstream beneficial effects on the Tombigbee River by reducing sediment and floodwater. This project, in combination with the other PL-566 projects, when completed will have downstream beneficial effects in the Tombigbee River Basin.

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The project will commit about 963 acres of forest and about 1,790 acres of open land to the following nonagricultural uses: (1) 983 acres in temporary retarding pools and recreation pools combined, (2) 225 acres in dam sites, spillways, and work areas, and (3) 1,545 acres for recreation facilities, temporary flood storage, and rights-of-way.

The land that will be covered by water in the sediment and recreation pools will not be available for other uses during the life of the project. The lands within the temporary retarding pool areas will be limited to uses that can withstand flooding at frequent intervals, especially at elevations near the sediment pool level. The lands within the channel right-of-way can be used only to the extent that the channel itself and access for maintenance is not affected. The lands around the recreation pools at the multiple purpose reservoirs will be committed to recreational purposes and will not be available for other uses as the primary purpose. Many of these committed lands can be used for other than their primary commitments, but these will have to be secondary to the primary purpose.

The capital investment in the project amounts to a total of \$5,045,550. This includes \$943,900 for land treatment measures, and \$4,101,650 for structural measures. Labor estimated to be used during the installation of the project will amount to 69,200 man-hours. Additionally 9,780 man-hours of labor will be used annually for the life of the project.

CONSULTATION AND REVIEW WITH APPROPRIATE AGENCIES AND OTHERS

a. General - The consultation and coordination for this project was accomplished through public meetings held by the steering committee; numerous meetings between the sponsoring organizations and the Service, most of which were open to the public; and formal public hearings held by the Watershed Commissioners. Meetings between the SCS biologist, representatives of the Bureau of Sport Fisheries and Wildlife, and personnel of the Mississippi Game and Fish Commission were also held. Project data were furnished to the U. S. Forest Service, the Bureau of Sport Fisheries and Wildlife, the Mississippi Game and Fish Commission, and the Mississippi Department of Archives and History.

The U. S. Forest Service participated in the preparation of the work plan. The Bureau of Sport Fisheries and Wildlife made a report on the fish and wildlife resources of the watershed and made suggestions for water level manipulation devices for the improvement of the fishery and waterfowl development. The report was concurred in by the Mississippi Game and Fish Commission and the suggestions made were included in the recommended project plan for Recreational Structures Nos. 5 and 11. The Mississippi Department of Archives and History made a survey and reported their findings and recommendations which will be concurred with.

Specific instances of consultation are as follows: Several agencies were advised of the development of the watershed plans during May 1968. Among those advised were the National Park Service, the Federal Water Pollution Control Administration, and the U. S. Corps of Engineers, Mobile District.

A review of recreational facility sites was made during the fall of 1968 by members of the Mississippi State Board of Health and the Air and Water Pollution Control Commission. Representatives of the U. S. Fish and Wildlife Service and the Mississippi Game and Fish Commission made a tour of the watershed in June 1970.

A public meeting was held November 5, 1970, to inform the public concerning the watershed project and to give the people an opportunity to make a statement as to whether they were for or against the project.

An archeological survey was completed in April 1975 of the watershed by the Mississippi Department of Archives and History. The survey revealed 14 sites in or near the project areas. Thirteen of the sites will be affected. All of these are small and have been previously destroyed by intensive agricultural practices. They are considered to be archeologically expendable. There are no National Register sites in the project area and none of the revealed sites are considered eligible for inclusion in the National Register of Historic Places.

Consultation with the Mississippi Park Commission, Bureau of Outdoor Recreation revealed that the watershed plans are in accord with the State-wide Comprehensive Outdoor Recreation Plan for the State of Mississippi.

b. Discussions and Disposition of Each Comment on Draft Statement

Comments were requested from the following agencies:

U. S. Department of the Army
U. S. Department of Commerce
U. S. Department of Health, Education, and Welfare
U. S. Department of the Interior
U. S. Department of Transportation
Environmental Protection Agency
Federal Power Commission
U. S. Water Resources Council
Office of Equal Opportunity, USDA
Governor, State of Mississippi
Federal-State Programs, Office of the Governor

Each of the above agencies with the exception of the following have responded: The U. S. Department of Commerce; Federal Power Commission; U. S. Water Resources Council; and the Office of Equal Opportunity, USDA.

Each issue, problem, or objection is summarized and a response given on the following pages. Comments are serially numbered where agencies have supplied multiple comments. The original letters of comment appear in Appendix C.

U. S. Department of the Army

Comment: We have reviewed this work plan and foresee no conflict with any project or current proposals of this Department. The draft of the environmental statement satisfies the requirements of Public Law 91-190, 91st Congress, insofar as this Department is concerned.

Response: None.

U. S. Department of Health, Education, and Welfare

Comment: We have reviewed the impacts of the proposed action, from the standpoint of this Department's areas of concern and find that we do not have any comments to make.

Response: None.

U. S. Department of the Interior

(1) Comment: Upon review of the work plan we conclude that it does not adequately consider mitigation measures or features to compensate for the loss of 983 acres of upland wildlife habitat. These acres will be permanently destroyed by project construction. To compensate for the loss

of this acreage of upland habitat, we recommend that an equal number of acres, comparable in habitat quality, be acquired by comprehensive easements or fee title and managed for the project life.

Response: Areas to be cleared resulting from project actions amount to less than 2 percent of the forested land in the watershed. Displaced wildlife will be assimilated into the large forested areas that exist within the watershed and the surrounding area. Such remaining forested areas in the watershed will be improved by the creation of small openings in stands favoring more desirable species of trees and shrubs for food and cover. The local sponsors do not feel that the loss of forested areas warrants mitigation in view of the improvements for wildlife habitat that will be realized in the surrounding areas.

(2) Comment: The proposed action will not adversely affect any existing proposed or known potential units of the National Park Service or any known historic, natural or environmental education sites eligible or considered potentially eligible for the National Landmarks Program. A portion of Natchez Trace Parkway will be affected by Structure No. 9 during extreme floodwater retention periods. The effect of this periodic inundation has been provided for in the design of section 3C2 of the parkway and is considered minor.

Response: None.

(3) Comment: It is noted that none of the 12 floodwater retarding structures or two multi-purpose structures provide for cool-water releases or minimum sustained flows. As a result, the proposed structures will have a severe detrimental effect on downstream fisheries and aquatic life. Below the dams, losses can be averted by discharging waters through a bypass located about 5 feet below normal pool level. Additionally, at this level should be located an ungated low-flow port (trickle tube) sized to discharge about 0.1 cubic feet per second per square mile of drainage area.

Response: The upper portions of Mantachie, Bogue Fala, and Bogue Eucuba Creeks are intermittent and do not support a year round fishery resource. The suggested low-flow release devices have been included to provide a steady cool-water flow that will minimize adverse effect to downstream fisheries and aquatic life. The design of each floodwater retarding and multiple purpose structure has been changed to include an opening to release a flow equivalent to 0.1 cubic feet per second per square mile of drainage area.

(4) Comment: We note that 260 acres of forest land in the sediment pools of Multiple Purpose Structures Nos. 5 and 11 will be cleared during construction. We suggest that some of these trees be retained as high stumps in the upper ends of these pools for fish cover and to help reduce bank erosion caused by wave action. Erecting artificial wood duck nesting boxes around the perimeter of these pools would help reduce waterfowl nesting habitat losses.

Response: The retention of high stumps in the upper reaches of the pools of Structures Nos. 5 and 11 will be included unless they interfere with the recreation capabilities of the pools. Artificial wood duck nesting boxes (10 per structure) will be erected at selected locations in the upper reaches of each recreation pool.

(5) Comment: Public recreation facilities are planned for Multiple-Purpose Structures Nos. 5 and 11; however, public access will not be provided to the 12 floodwater retarding structures. We recommend that adequate provisions for public access to all 12 floodwater retarding structures be considered in preparation of the final plan.

Response: The local sponsors have considered providing public access at some of the larger floodwater retarding structures. After due consideration, they decided that it would not be in the best interest of the people of the watershed that public access be provided. The local sponsors have the responsibility for securing all necessary land rights. Public Law 566 nor the Department's rules and regulations require that public access be made available. Therefore, the matter of public access is within the discretion of the local sponsors.

(6) Comment: We note that on pages 41 and 42 of the work plan a 100-percent reduction of stages is mentioned. This is ambiguous; the use of numerical values of stage reduction would be more understandable.

Response: This section of the work plan was rewritten so as to better describe the effects of the project on the reduction of damaging floods. (Page 44 of work plan)

(7) Comment: A review of the abbreviated quality plan does not indicate what input, if any, came from local, state, federal, and other concerned groups not directly associated with the Soil Conservation Service or local project sponsors.

Response: The abbreviated environmental quality plan was prepared by an interdisciplinary team composed of employees of the Soil Conservation Service.

(8) Comment: Component Need No. 3 of the Environmental Quality Plan states in part that wildlife habitat should be enhanced in the watershed through the use of good management practices. This is only a statement of the component needs and does not include a discussion of the methods to be used in accommodating these needs. We suggest that the good management practices be discussed in detail.

Response: Some of the good management practices that could be used to achieve the wildlife habitat portion of the total component need have been added in the abbreviated environmental quality plan portion of the work plan addendum. The component need No. 3 is to Preserve and/or Enhance the Natural Setting of Selected Portions of the Watershed. The enhancement of the wildlife habitat in the watershed is listed as one of the elements that would help to achieve the component.

(9) Comment: The draft environmental statement does not adequately consider land treatment measures as related to fish and wildlife resources. First, there is insufficient detailed information on land treatment measures which supposedly would benefit wildlife resources. Second, there are no assurances that these land treatment measures, which are to be installed voluntarily by the landowner, will ever be installed or, if installed, will be maintained for the life of the project.

Response: All of the 19 land treatment measures listed in the Planned Project section affect wildlife resources either directly or indirectly through the supply of food, cover, and water, or by the reduction of erosion, flooding, and sediment. Secondly, there are on-going programs through agencies other than the Soil Conservation Service which provide cost-share money for the construction and maintenance of various practices beneficial to wildlife. Technical assistance for the planning and establishment of such measures are provided by Soil Conservation Service personnel (soil conservationists, biologists, engineers, forester, etc.) and by the Mississippi Forestry Commission in cooperation with the U. S. Forest Service. Hunting clubs and fish pond operations provide additional incentive for private and commercial landowners to make use of wildlife and fisheries benefiting conservation measures. The greatest incentive to the establishment and continuance of a long lasting wildlife benefiting conservation program are the economic, environmental, and esthetic values derived by the landowners and society from the combinations of land treatment measures that make up those programs.

(10) Comment: Direct recreation benefits comprise 32 percent of total benefits yet we find no discussion of the inter-relationship of project proposals and recreation in the vicinity. The sections entitled Environmental Setting and Environmental Impacts should include a discussion of other existing and proposed recreation developments in the area; i. e., Tombigbee State Park, proposed Mackey's Creek Wildlife Management Area, and two Corps of Engineers reservoirs (Amory-Aberdeen and Bay Springs) to be constructed as part of the Tombigbee Project.

Response: Information relating to other existing and proposed recreational developments in the area of the proposed watershed project, as suggested in the above comment, have been included in appropriate sections of the work plan and environmental impact statement. (p.15 in WP; p. 24 of EIS)

(11) Comment: We note that no mention is made of the Mississippi Park System in the section on Consultation and review with appropriate agencies and others. Personnel from that office would be an excellent source of assistance in developing a recreation master plan for the project.

Response: The Mississippi Park Commission had been contacted through requests that they review different drafts of the work plan and environmental impact statement. However, a direct contact with the Mississippi Park Commission, Bureau of Outdoor Recreation had not been made. This has now been accomplished. The State Liaison Officer, Mississippi Park Commission, has been contacted and consulted with on the compatibility of the recreation developments proposed for this project with the Statewide Comprehensive Outdoor Recreation Plan.

(12) Comment: Potential adverse environmental impacts related to geologic conditions have been given adequate consideration in the draft environmental statement and work plan.

Response: None.

(13) Comment: Both the statement and work plan are generally deficient in their handling of project impacts on cultural resources. The final impact statement must show full compliance with the Historic Preservation Act of 1966, the Procedures for the Protection of Historic and Cultural Properties (36 CFR 800), and should discuss the potential use of P.L. 93-291 (Reservoir Salvage Act Amendments).

Response: Additional information has been incorporated into the work plan and the environmental impact statement. The procedures

for the Protection of Historic and Cultural Properties (36 CFR 800), have been fully complied with and the potential use of P.L. 93-291 (Reservoir Salvage Act Amendments) has been discussed. (Work plan pages 36 and 37; EIS pages 8, 9 and 24)

(14) Comment: From the present discussion on page 22 of the statement, it appears that a new and more thorough archeological survey should be conducted in accordance with 36 CFR 800. Should any of the Indian mounds or historic sites meet the criteria of 36 CFR 800.10, it may become necessary to nominate them for inclusion in the National Register of Historic Places. The final statement should summarize the archeological survey and any actions taken pursuant to 36 CFR 800.

Response: The most recent archeological survey was concluded in April 1975 in accordance with 36 CFR 800. There are no National Register sites in the project area and none of the revealed sites are considered eligible for inclusion into the National Register for Historic Places. A summary of the archeological survey has been included in the final statement. (EIS page 24)

(15) Comment: While it is best to locate, evaluate, and provide for cultural resource protection as early as possible in the planning process, it may become necessary to salvage certain resources in accordance with P.L. 93-291. The final statement should note this and provide for referral of the archeological survey and other information to the Department's National Park Service so that recovery operations can be planned.

Response: According to the results of the archeological survey recently completed, all affected sites have previously been destroyed and are archeologically expendable.

(16) Comment: In order for the final statement to conclude that erosion, flooding, and sedimentation will be reduced by the land treatment measures, we feel that the document should explain any efforts to gain firmer commitments from the landowners to install and maintain the land treatment measures for the project life.

Response: The three Soil and Water Conservation Districts are co-sponsors of this plan and it is their aim with assistance from the Soil Conservation Service to work with watershed landowners and operators in the planning, establishment, and maintenance of the land treatment measures. The Mississippi Forestry Commission, in cooperation with the U. S. Forest Service and the Soil and Water Conservation District, will assist



the landowner and operator to plan, establish, and maintain land treatment measures on forest land. The landowners and operators with assistance from Soil Conservation Service, Soil and Water Conservation Districts, Mississippi Forestry Commission, and other agencies or groups have an excellent record over the past 40 years in the establishment and maintenance of land treatment and there is no apparent reason to think that their interests in conservation will change. In the last few years the Soil Conservation Service has employed several biologists in Mississippi to assist in the biological phases of all Soil Conservation Service work including land treatment installation.

(17) Comment: Before the effects of land treatment measures on the environment can be identified and evaluated, the species of trees, locations of plantings, site preparation methods, specific forestry management practices, and the importance of the trees as a source of food and cover to various types of wildlife utilizing them should be discussed.

Response: The section of the work plan and environmental impact statement that discussed tree planting has been expanded to indicate species of trees to be planted, general locations, some of the management practices, and some anticipated native species of plants that are expected to appear as the trees are planted. (Work plan page 31 and EIS page 2.)

(18) Comment: Planned land use changes consist of converting 3,072 acres of idle land or diverted acreage into 459 acres of cropland, 2,247 acres of grassland, and 366 acres of forest land. To assess the effect of land changes on wildlife, the tree species to be planted on the 366 acres of forest land should be identified. In this regard, trees and/or shrubs of value to wildlife should be considered in the vegetative plan.

Response: This paragraph has been rewritten in the environmental impact statement to read - "It is anticipated that the installation of this project will result in a net loss of 3,072 acres of idle land and the net increase of 459 acres of cropland, 2,247 acres of grassland, and 366 acres of forest land." This forest land change is included in the forest lands used in the response to the previous comment. (EIS page 9)

(19) Comment: On pages 14-15 of the environmental statement, the information given is from reports published in 1946 and 1947, which were based in part on USGS Bulletin 576, 1928. The paragraph on flowing wells, for instance, is past history and no longer applies. We suggest that the authors make use of later reports.

Response: The ground water section has been re-written making use of later reference information. (EIS pages 15, 16, and 17; work plan pages 6, 7, and 8)



(20) Comment: The final impact statement probably should indicate that degradation and channel enlargement may be anticipated in the reaches immediately downstream from the proposed dams. The floodwater retarding structures, acting as sediment traps, would pass less turbid waters through them. The cleaner water would then erode the stream channel as it seeks equilibrium with the channel materials.

Response: A paragraph has been added to the Environmental Impact section on page 31, to the adverse effects section to discuss the effects listed in the comment above.

(21) Comment: Mineral resources of the watershed include sand and gravel, bentonite and clays. In addition, it is possible that oil and gas may be found.

Response: None.

(22) Comment: Our information indicates that the third paragraph on page 4 is accurate with regard to the project having no impact on existing mineral operations. However, the sentence on page 15, paragraph 4: "There are no known oil, gas, or other mineral deposits of commercial value within the watershed boundary;" could be misleading. The statement should be revised to indicate that market conditions and the depletion of these resources elsewhere could renew interest in exploration for these minerals within the watershed.

Response: Portions of the work plan and the environmental impact statement have been changed to include the information suggested in the above comment. (Work plan page 8; EIS page 17)

(23) Comment: Although the immediate project impact on mineral resources may appear to be slight, the statement should be amended to include discussion of long-term or potential impact on minerals, including the commitment of resources for project construction.

Response: The discussion, as suggested in the above comment, has been placed in the Environmental Impact Statement and Work Plan. (EIS page 32; work plan page 8)

Department of Transportation, United States Coast Guard

Comment: The environmental impact statement should include a discussion of planning for small boat safety and boating education. The Department has no other comments to offer nor do we have any objection to this project.



Response: Planning for small boat safety has been considered and is a part of the design of the recreation facilities and impoundments. Boating education, as such, is not within the realm of responsibility of the Soil Conservation Service. However, this has been discussed with the local sponsors and they have indicated they will operate all of the recreational facilities in as safe a manner as reasonably possible.

Environmental Protection Agency

(1) Comment: We find no indication that the action will cause any significant long-term degradation of water quality. We also note modification of some aspects of the project to comply with suggestions of the Fish and Wildlife Service in order to minimize impacts on fish and wildlife.

Response: None.

(2) Comment: Although erosion and sediment problems probably will occur during construction, these should be minimal with the proper controls, and the watershed should be well stabilized in a short time. There are no large municipalities or industries in the watershed; hence, there should be no significant waste loads that could cause pollution by alteration of the hydraulic regime.

Response: None.

(3) Comment: We note that there are over 17,000 acres of Type I wetlands adjacent to the main stream (as described in Circular 39, Wetlands of the United States, Fish and Wildlife Service, U. S. Department of the Interior). This could indicate the possible need for a U. S. Army Corps of Engineers' permit for discharge of dredge and fill material pursuant to Section 404 of the Federal Water Pollution Control Act Amendments of 1972. If there are 404 implications, the final impact statement should address this, and the need for the necessary permit.

Response: The applicability of Section 404 of the Federal Water Pollution Control Act Amendments of 1972 are now in litigation. It is not known at this time if there are 404 implications in this watershed. However, if Section 404 of the Federal Water Pollution Control Act Amendments of 1972 becomes applicable to this watershed, the local sponsors will secure the necessary permits.

(4) Comment: We believe it would be helpful if the final impact statement included a table summarizing the costs and impacts of each alternative and for the proposed project.



Response: We feel the Alternatives section as presented adequately describes the impacts and lists the costs. Since the impacts vary significantly with each alternative, a narrative statement seems to be the best choice for displaying the impacts. We will, however, continue to work on methods of display that will improve the ease of comparing and the readability of the impacts and costs of each alternative.

Governor, State of Mississippi

Comment: All concerned State agencies have reviewed the Watershed Work Plan and Draft Environmental Impact Statement for Watershed Protection, Flood Prevention, Agricultural Water Management, and Other Beneficial Purposes. All of the agencies approved the work plan as presented.

Response: None.

Federal State Programs, Office of the Governor

Comment: This notice constitutes FINAL STATE CLEARINGHOUSE REVIEW AND COMMENT. The requirements of the U. S. Office of Management and Budget Circular No. A-95 have been met at the State level.

Response: None.

Mississippi State Board of Health

Comment: On all impoundments provisions should be made to allow fluctuating the water levels for mosquito control purposes. We are particularly concerned about the two Multi-purpose Structures Nos. 5R and 11R since there are indications that these will be used for water contact recreation. The Itawamba County Board of Supervisors and other local sponsoring organizations should make adequate provisions to prevent pollution of these two lakes by runoff from developments constructed in the watersheds.

Response: Water level control devices will be installed in Structures Nos. 5 and 11. These gates will be used for fishery and waterfowl management. They will also aid in the control of aquatic vegetation and for mosquito control purposes. The local sponsors are aware of the dangers of pollution from developments that might take place in the drainage area above the multiple purpose reservoirs. They will try to take the necessary steps to prevent these developments from occurring or try to prevent the developments, if they do occur, from becoming a source for downstream pollution.



Mississippi Board of Water Commissioners

(1) Comment: No objections were brought out by this review as to the necessity or the benefits provided by the plan.

Response: None.

(2) Comment: The opening sentence on page 22, paragraph 3, tells how 79 farm ponds and the desilting basins will add to the fishery habitat and provide wildlife habitat around the edges of these bodies. However, will these private ponds be open to the public and will they be properly managed?

Response: Private ponds may or may not be open to the public depending upon the wishes of the owner. A portion of the total number of ponds will be properly managed. However, management of private ponds will be the responsibility of and at the discretion of the pond owner or operator. We feel that almost any pond provides some fishery habitat and provides for some wildlife habitat. Of course the level of management has very much to do with the value and quality of the habitat.

(3) Comment: The only land set aside for wildlife to replace habitat lost to the projects are private lands, as stated on page 2, paragraph 3. Is there a planned on-going program to provide economic incentive to these private landowners to continue their conservation efforts?

Response: There are on-going programs through the ASCS to provide cost-share money for the construction of wildlife watering areas, planting and maintaining upland wildlife food plots, and construction of shallow water basins for attracting waterfowl. The SCS provides technical assistance in planning and establishing these various aspects of wildlife management through their area biologists. Another incentive for the private landowner to utilize conservation practices for wildlife is the encouragement provided the landowner by several wildlife conservation agencies to manage and lease land to hunting clubs. If management practices are conducted properly and the land is capable of producing large wildlife yields, the revenues that are provided compare favorably with revenues derived from agriculture.

(4) Comment: "What is the net effect on total feeding acres for waterfowl due to the loss of flooded bottomland and the feeding acres afforded by the 983 acres of surface water?" needs to be answered.

Response: We feel that the overall attraction for waterfowl will be increased by the watershed project. The flooded bottomlands in the Mantachie Watershed, with the exception of the portion



flooded by the Tombigbee River, has in the past not attracted waterfowl because of the short-lived duration of flooding. There was food but not water for resting areas. The availability of this food supply in the flooded bottomlands, with the exception of the Tombigbee River flood plain, will be reduced as a result of the project. The 983 acres of water will provide water resting areas for attracting waterfowl and will add to the supply of food available. We feel that there is an adequate supply of food for all waterfowl that will be attracted by the net additional water areas provided by the project.

Mississippi Game and Fish Commission

Comment: We have reviewed the Draft Environmental Impact Statement and do not wish to make any comments on it.

Response: None.

Bureau of Outdoor Recreation, Mississippi Park Commission

Comment: In response to your letter of April 16, 1975, the Okatoma Creek Watershed, the Mantachie Watershed, and the proposed Kemper County Lake projects are all in accordance with the Statewide Comprehensive Outdoor Recreation Plan.

Response: None.

Mississippi State Highway Department

Comment: It is noted that structural measures include the construction of 12 retarding structures and 2 multiple-purpose structures. Highways located within this watershed should benefit by the changes in runoff effected by these structures. The work plan indicates a reduction in stage and discharge for floods of magnitudes up to the 100 year storm for Mantachie Creek at U. S. 78, S. R. 371, and S. R. 363; Bogue Fala Creek at U. S. 78 and S. R. 371; and Bogue Eucuba Creek at U. S. 78 and S. R. 371.

Response: None.

LIST OF APPENDIXES

Appendix A - Comparison of Benefits and Costs for Structural Measures

Appendix B - Project Map

Appendix C - Letters of Comment Received on Draft Environmental Statement

Approved by W.L. Heard Date 7-24-75
W.L. Heard, State Conservationist

APPENDIX A - COMPARISON OF BENEFITS AND COSTS FOR STRUCTURAL MEASURES

Mantachie, Bogue Fala, and Bogue Eucuba Creek Watershed, Mississippi

(Dollars)

Evaluation Unit	AVERAGE ANNUAL BENEFITS ^{1/}			: Average			Benefit Ratio
	Damage Reduction	Recreation	Redevelopment	Secondary	Total	Cost	
Mantachie Creek	171,500:	94,600	:	19,100	26,100	311,300	132,000 : 2.4:1.0
Bogue Fala Creek	95,700:	98,800	:	20,700	19,200	234,400	127,500 : 1.8:1.0
Bogue Eucuba Creek Project	53,900:	0	:	2,300	5,200	61,400	17,400 : 3.5:1.0
Administration	--	--	:	--	--	--	22,100 : --
GRAND TOTAL	2/ 321,100:	193,400	:	42,100	50,500	607,100	299,100 : 2.0:1.0

^{1/} Price base crops and pasture damage, current normalized prices; other damages, 1973 prices.

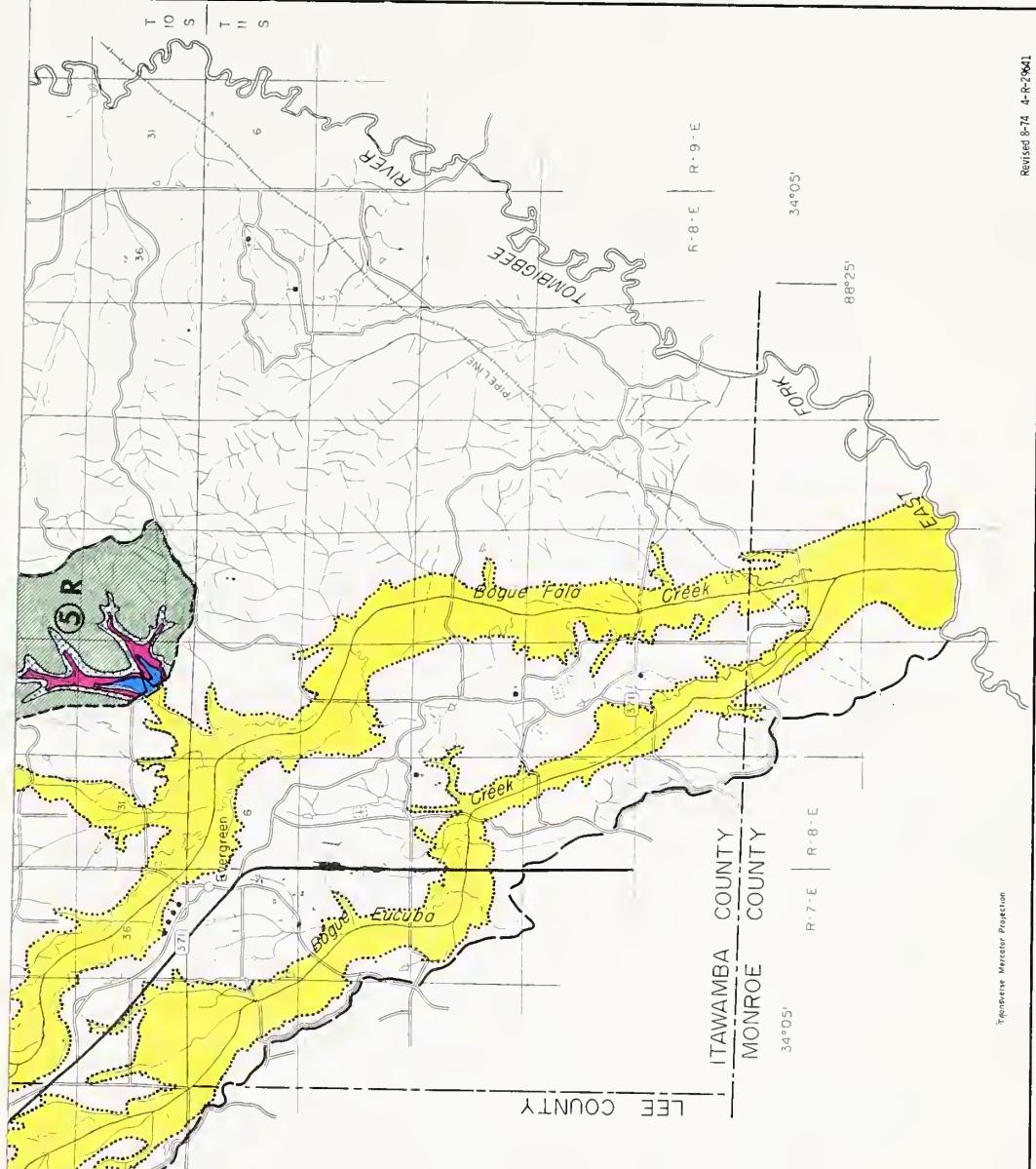
^{2/} In addition, it is estimated that land treatment measures will provide flood damage reduction benefits of \$17,000 annually.

PROJECT MAP
MANTACHIE, BOGUE EUCUBA AND
BOGUE FALA CREEKS WATERSHED
ITAWAMBA, LEE AND MONROE COUNTIES,
MISSISSIPPI

FIGURE

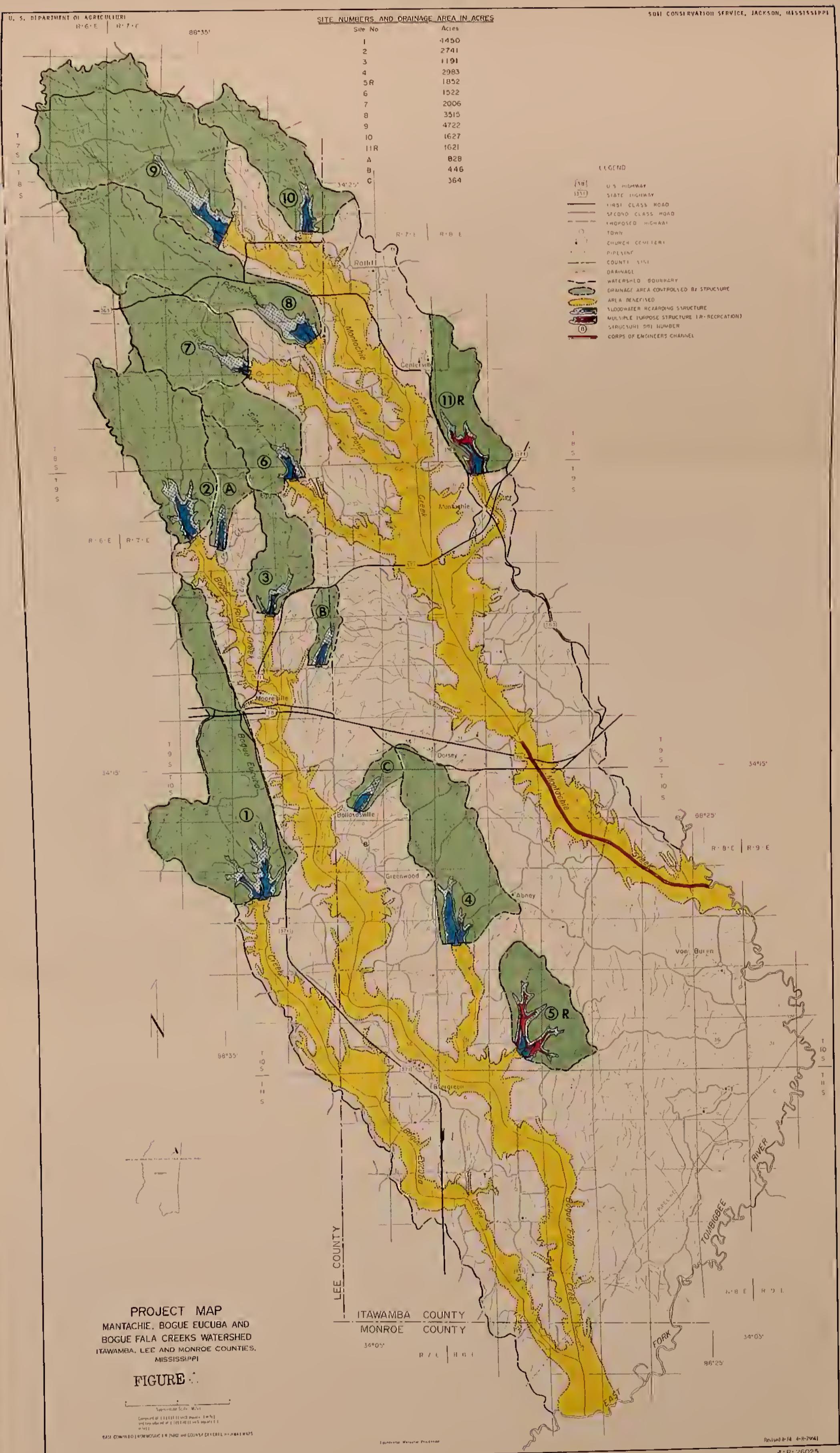
Approximate Scale - Miles
 Compiled at 1:31,680 (1 inch equals .5 mile)
 and reproduced at 1:16,000 (1 inch equals 1.7
 miles).
 BASE COMPILED FROM MOSAIC 4-R-2602 3rd COUNTY GENERAL HIGHWAY MAPS

Transverse Mercator Projection



Revised 8-74 4-R-2602
 4 - R - 26025

MARCH 1968



ENVIRONMENTAL IMPACT STATEMENT
FOR
MANTACHIE, BOGUE FALA, AND BOGUE EUCUBA CREEKS WATERSHED

APPENDIX C



76-93827A
15 APR 1975
Klingelhoefer
filed
DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON, D.C. 20310

Honorable Robert W. Long
Assistant Secretary of Agriculture
Washington, D.C. 20250

Control No.
76-93827A

Referred to: SCS

Date: APR 18 1975

B

Dear Mr. Long:

In compliance with the provisions of Section 5 of Public Law 566, 83d Congress, the Mississippi State Conservationist of the Soil Conservation Service, by letter of 5 February 1975, requested the views of the Secretary of the Army on the work plan for the Mantachie, Bogue Fala, and Bogue Eucuba Creeks Watershed, Mississippi.

We have reviewed this work plan and foresee no conflict with any projects or current proposals of this Department. The draft of the environmental statement satisfies the requirements of Public Law 91-190, 91st Congress, insofar as this Department is concerned.

Sincerely,

Charles R. Ford
Deputy Assistant Secretary of the Army
(Civil Works)





DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20201

APR 17 1975

Mr. W. L. Heard
State Conservationist
Soil Conservation Service
Department of Agriculture
P. O. Box 610
Jackson, Mississippi 39205

Dear Mr. Heard:

We have reviewed the draft Environmental Impact Statement concerning the Mantachie, Bogue Fala, and Bogue Eucuba Creeks Watershed, Mississippi. We have reviewed the impacts of the proposed action from the standpoint of this Department's areas of concern and find that we do not have any comments to make.

Thank you for the opportunity to review the document.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles Custard".

Charles Custard
Director
Office of Environmental Affairs





United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

In Reply Refer to:
ER-75/140

APR 23 1975

Dear Mr. Heard:

Thank you for your letter of February 5, 1975, requesting our views and comments on the work plan and draft environmental statement for Mantachie, Bogue Fala, and Bogue Eucuba Creeks Watershed, Itawamba, Lee, and Monroe Counties, Mississippi. We have comments on both documents.

Work Plan (General)

Upon review of the work plan we conclude that it does not adequately consider mitigation measures or features to compensate for the loss of 983 acres of upland wildlife habitat. These acres will be permanently destroyed by project construction. On page 26 of the work plan (second full paragraph) reference is made to creation of 983 acres of reservoir fishery but this in no way mitigates the habitat loss. In the next paragraph a vague reference is made to 600 acres of wildlife land being adequately treated during construction. Again, we cannot correlate this to satisfactory mitigation of the basic loss.

To compensate for the loss of 983 acres of upland habitat, we recommend that an equal number of acres, comparable in habitat quality, be acquired by comprehensive easements or fee title and be managed for the project life. Support for this recommendation is found in the August 13, 1974, letter (copy enclosed) from the Administrator, Soil Conservation Service to the Assistant Secretary of Interior regarding the Big Running Water Ditch project, Arkansas which states, in part:

Our policy states 'Losses of existing habitat caused by project works of improvement must be mitigated as fully as physically possible and economically feasible by adding measures to minimize, restore, replace, or compensate for the loss.'



Save Energy and You Serve America!

The proposed action will not adversely affect any existing, proposed or known potential units of the National Park Service or any known historic, natural or environmental education sites eligible or considered potentially eligible for the National Landmarks Program. A portion of Natchez Trace Parkway will be affected by structure No. 9 during extreme flood water retention periods. The effect of this periodic inundation has been provided for in the design of section 3C2 of the parkway and is considered minor.

Work Plan (Specific)

Page 30

It is noted that none of the 12 floodwater retarding structures or 2 multipurpose structures provide for cool-water releases or minimum sustained flows. As a result, the proposed structures will have a severe detrimental effect on downstream fisheries and aquatic life. Below the dams, losses can be averted by discharging waters through a bypass located about 5 feet below normal pool level. Additionally, at this level should be located an ungated low-flow port (trickle tube) sized to discharge about 0.1 cubic feet per second per square mile of drainage area.

Pages 32 and 33

We note that 260 acres of forest land in the sediment pools of Multiple-Purpose Structure Nos. 5 and 11 will be cleared during construction. We suggest that some of these trees be retained as high stumps in the upper ends of these pools for fish cover and to help reduce bank erosion caused by wave action. Erecting artificial wood duck nesting boxes around the perimeter of these pools would help reduce waterfowl nesting habitat losses.

Page 32, paragraph 6

Public recreation facilities are planned for Multiple-Purpose Structures Nos. 5 and 11; however, public access will not be provided to the 12 floodwater retarding structures. It is stated that the Watershed Commissioners will discourage public recreation use at these sites because of a lack of adequate sanitary facilities, increased maintenance of flood prevention features, and safety precautions. The Department's Fish and Wildlife Service has responsibility for maintaining

and increasing public opportunities for recreational use of fish and wildlife resources. In keeping with this responsibility and stated recommendations of the Committee on Government Operations contained in the October 21, 1974, House Report No. 93-586 entitled "Public Access to Reservoirs to Meet Growing Recreation Demands," we recommend that adequate provisions for public access to all 12 floodwater retarding structures be considered in preparation of the final plan.

Pages 41-42

We note that on these pages a 100-percent reduction of stages is mentioned. This is ambiguous; the use of numerical values of stage reduction would be more understandable.

Work Plan Addendum

Introduction

It is stated, "The abbreviated environmental quality plan has been developed by an inter-disciplinary team using information and data assembled during investigations and analysis for the watershed work plan." However, a review of the abbreviated environmental quality plan does not indicate what input, if any, came from local, State, Federal, and other concerned groups not directly associated with the Soil Conservation Service or local project sponsors.

Environmental Quality Plan

Component Need No. 3 states in part that "Wildlife habitat should be enhanced in the watershed through the use of good management practices." This is only a statement of the component needs and does not include a discussion of the methods to be used in accommodating these needs. We suggest that the "good management practices" be discussed in detail.

Environmental Statement (General)

The draft environmental statement does not adequately consider land treatment measures as related to fish and wildlife resources. First, there is insufficient detailed information on land treatment measures which supposedly would benefit wildlife resources. Second, there are no assurances that these land treatment measures, which are to be installed

voluntarily by the landowner, will ever be installed or, if installed, will be maintained for the life of the project.

Direct recreation benefits comprise 32 percent of total benefits yet we find no discussion of the inter-relationship of project proposals and recreation in the vicinity. The sections entitled "Environmental Setting" and "Environmental Impacts" should include a discussion of other existing and proposed recreation developments in the area; i.e., Tombigbee State Park, proposed Mackey's Creek Wildlife Management Area, and two Corps of Engineers reservoirs (Amory-Aberdeen and Bay Springs) to be constructed as part of the Tombigbee Project.

We note that no mention is made of the Mississippi Park System in the section on Consultation and Review With Appropriate Agencies and Others. Personnel from that office would be an excellent source of assistance in developing a recreation master plan for the project.

Potential adverse environmental impacts related to geologic conditions have been given adequate consideration in the draft environmental statement and work plan.

Both the statement and work plan are generally deficient in their handling of project impacts on cultural resources. The documents indicate that a preliminary archeological survey was made, and it shows ". . . there are Indian mounds and other historical sites scattered throughout the watershed." The final impact statement must show full compliance with the Historic Preservation Act of 1966, the Procedures for the Protection of Historic and Cultural Properties (36 CFR 800), and should discuss the potential use of P.L. 93-291 (Reservoir Salvage Act Amendments).

From the present discussion on page 22 of the statement, it appears that a new and more thorough archeological survey should be conducted in accordance with 36 CFR 800. Should any of the Indian mounds or historic sites meet the criteria of 36 CFR 800.10 it may become necessary to nominate them for inclusion in the National Register of Historic Places. The final statement should summarize the archeological survey and any actions taken pursuant to 36 CFR 800.

While it is best to locate, evaluate, and provide for cultural resource protection as early as possible in the planning process, it may become necessary to salvage certain resources in accordance with P.L. 93-291. The final statement should note this and provide for referral of the archeological survey and other information to the Department's National Park Service so that recovery operations can be planned.

Environmental Statement (Specific)

Page 1, paragraph 3

It is stated, "The project provides for technical assistance for accelerating the establishment of land-treatment measures throughout the 113,585 acres watershed." Since installation of the proposed land-treatment measures is voluntary and at the local landowner's expense, we believe that the measures will not be initiated, especially those that require continued application over long periods of time, unless binding assurances are given that the measures will in fact be implemented. In order for the final statement to conclude that erosion, flooding, and sedimentation will be reduced by the land treatment measures, we feel that the document should explain any efforts to gain firmer commitments from the landowners to install and maintain the land treatment measures for the project life.

Page 2, paragraph 3

It is stated, "Land treatment measures to be applied by private landowners that will improve wildlife and fishery habitat consist of 79 farm ponds, 100 acres of wildlife development, and 500 acres of wildlife preservation. Additional land-treatment measures that will benefit wildlife will be the planting of 700 acres of gullies to various tree species." Before the effects on the environment can be identified and evaluated, the species of trees, locations of plantings, site preparation methods, specific forestry management practices, and the importance of the trees as a source of food and cover to various types of wildlife utilizing them should be discussed. We acknowledge that landowners continue to use soil building practices for which benefits are available, but the wildlife management practices are frequently abandoned.

Page 8, paragraph 4

"Planned land use changes consist of converting 3,072 acres of idle land or diverted acreage into 459 acres of cropland, 2,247 acres of grassland, and 366 acres of forest land." To assess the effect of land changes on wildlife, the tree species to be planted on the 366 acres of forest land should be identified. In this regard trees and/or shrubs of value to wildlife should be considered in the vegetative plan.

Pages 14-15

On pages 14-15 of the environmental statement the information given is from reports published in 1946 and 1947, which were based in part on USGS Bulletin 576, 1928. The paragraph on flowing wells, for instance, is past history and no longer applies. We suggest that the authors make use of the three later reports listed below:

Boswell, E. H., and Lang, J. W., 1960, Public and industrial water supplies in a part of northern Mississippi: Miss. Geol. Survey Bull. 90.

Boswell, E. H., 1963, Cretaceous aquifers of northeastern Mississippi: Miss. Board Water Comm. Bull. 63-12.

Wasson, B. E., and Thomason, F. H., 1970, Water resources of Lee County, Mississippi: U.S. Geol. Survey Water-Supply Paper 1899-B.

The final impact statement probably should indicate that degradation and channel enlargement may be anticipated in the reaches immediately downstream from the proposed dams. The floodwater retarding structures, acting as sediment traps, would pass less turbid waters through them. The cleaner water would then erode the stream channel as it seeks equilibrium with the channel materials.

Mineral resources of the watershed include: sand and gravel, bentonite and clays. In addition, it is possible that oil and gas may be found.

Our information indicates that the third paragraph on page 4 is accurate with regard to the project having no impact on existing mineral operations. However, the sentence on page 15, paragraph 4, "there are no known oil, gas, or other mineral deposits of commercial value within the watershed boundary,"

could be misleading. The statement should be revised to indicate that market conditions and the depletion of these resources elsewhere could renew interest in exploration for these minerals within the watershed.

Although the immediate project impact on mineral resources may appear to be slight, the statement should be amended to include discussion of long-term or potential impact on minerals, including the commitment of resources for project construction.

We hope these comments will assist you in preparing final project documents.

Sincerely yours,



Deputy Assistant Secretary of the Interior

Mr. W. L. Heard
State Conservationist
Soil Conservation Service
Department of Agriculture
P. O. Box 610
Jackson, Mississippi 39205

Enclosure

AUG 13 1974

Your Reference:

FWS/ES

Honorable Nathaniel P. Reed
Assistant Secretary for
Fish and Wildlife and Parks
U. S. Department of the Interior

Dear Mr. Reed:

This is in response to your letter of July 29, 1974, concerning the Big Running Water Ditch Watershed in Arkansas. As stated in our May 9 letter to the Director, Fish and Wildlife Service, the plan as supplemented contains many measures, actions, and provisions to minimize the loss to fish and wildlife in the project and to mitigate those losses which will unavoidably occur. The purchase of the 130 acre tract mentioned in your letter is only one of these. The complete list follows:

1. Channel enlargement between Station 432:00 and Station 545:00 has been eliminated to preserve the fish and wildlife habitat in this area.
2. Approximately 130 acres will be purchased by the sponsors as a mitigation measure. This area will be reserved for forest wildlife such as squirrels, deer, raccoon, woodpeckers, and songbirds. Woodland management will feature the oakhickory species by removing, where necessary, competing species.
3. A levee will be constructed across Horseshoe Lake to prevent flow from Big Running Water Ditch from entering the northern end of the lake and to raise and stabilize the water level in this portion of the lake. This lake has been rapidly filling with sediment during recent years. The muddy water has not provided a good habitat for fish and other wildlife. The construction of this levee will decrease the sediment deposition and improve the water quality in the protected portion of the lake. The increased depth and improved quality will provide a better area for fish and wildlife than now exists.
4. A combination water-control and grade stabilization structure will be installed on the main ditch at approximately Station 432:00 to raise and stabilize the water level to protect the existing habitat for fish, frogs, ducks, raccoons, and muskrats.
5. Approximately four low-water weirs or combination grade control and water-control structures will be installed in the main channels to help control woody vegetation and provide improved fish and wildlife habitat. These structures will consist of rock riprap with a sheet piling cutoff wall.

FWS-3014



6. The channels will be excavated from one side where practical, and when control of side drains can be accomplished.
7. Channels will be constructed in such a manner as to minimize unnecessary removal of vegetation and trees. All disturbed areas will be revegetated as quickly as possible to prevent erosion, improve stability, and to restore or maintain wildlife habitat and the aesthetic quality of the environment. This includes herbaceous and woody plants for erosion control, wildlife food and shelter, and screening or improving the appearance of structural measures.
8. Approximately 300 water-control structures (pipe drops) will be installed along the main ditch and laterals to control essentially all side drains, to reduce sediment pollution, and to provide access for maintenance.

{ It is the policy of the SCS that all watershed projects must be consistent with IEP. Our policy states "Losses of existing habitat caused by project works of improvement must be mitigated as fully as physically possible and economically feasible by adding measures or features to minimize, restore, replace, or compensate for the loss. The sponsors and SCS must take affirmative action to be sure that all planned mitigation measures are installed and maintained."

In addition to requiring appropriate mitigation measures the SCS encourages sponsors to include fish and wildlife developments for enhancement purposes. Such developments must be identified as enhancement to be cost shared under PI-566 and will not be included in watershed projects under the guise of mitigation.

The 445 acre fish and wildlife area was proposed as a fish and wildlife enhancement measure, with fish and wildlife as a project purpose. It was neither suggested as, nor considered to be, a mitigation measure.

Since a satisfactory method of financing the local costs of the fish and wildlife development could not be found, it was deleted from the plan, however all mitigation measures remain in the plan as supplemented.

Sincerely,

D.M. Whitt Acting

Kenneth E. Grant
Administrator

Mr. W. L. Heard
State Conservationist
Soil Conservation Service
P. O. Box 610
Jackson, Mississippi 39205

Dear Mr. Heard:

This is in response to your letter of 5 February 1975 addressed to the Commandant, U. S. Coast Guard concerning the draft environmental impact statement for the Mantachie, Bogue Fala, and Bogue Eucuba Creeks Watershed, Itawamba, Lee and Monroe Counties, Mississippi.

The concerned operating administrations and staff of the Department of Transportation have reviewed the material submitted. The Coast Guard commented as follows:

"The environmental impact statement should include a discussion of planning for small boat safety and boating education."

The Department has no other comments to offer nor do we have any objection to this project.

The opportunity to review this draft statement is appreciated.

Sincerely,

W. F. CALDWELL
Commandant
Coast Guard
U. S. Department of Transportation
by direction of the Commandant



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IV

1421 PEACHTREE ST., N. E.
ATLANTA, GEORGIA 30309

April 22, 1975

Mr. W. L. Heard
State Conservationist
U. S. Soil Conservation Service
P. O. Box 610
Jackson, Mississippi 39205

Dear Mr. Heard:

We have reviewed the Draft Environmental Impact Statement and Work Plan for the Mantachie, Bogue Fala, and Bogue Eucuba Creeks Watershed in Mississippi and find no indication that the action will cause any significant long-term degradation of water quality. We also note modification of some aspects of the project to comply with suggestions of the Fish and Wildlife Service in order to minimize impacts on fish and wildlife.

Although erosion and sediment problems probably will occur during construction, these should be minimal with the proper controls, and the watershed should be well stabilized in a short time. There are no large municipalities or industries in the watershed; hence, there should be no significant waste loads that could cause pollution by alteration of the hydraulic regime.

We further note, however, that there are over 17,000 acres of Type I wetlands adjacent to the main stream (as described in Circular 39, Wetlands of the United States, Fish and Wildlife, U. S. Department of the Interior). This could indicate the possible need for a U. S. Army Corps of Engineers permit for discharge of dredge and fill material pursuant to Section 404 of the Federal Water Pollution Control Act Amendments of 1972. If there are 404 implications, the final impact statement should address this, and the need for the necessary permit.

We also believe it would be helpful if the final impact statement included a table summarizing the costs and impacts of each alternative and for the proposed project.

In view of the foregoing, we have assigned a rating of LO- (lack of objection) to the project and 2 (insufficient information) to the Impact Statement. When the final impact statement is available please furnish us with five copies, and if we can be of further assistance in any way, please let us know.

Sincerely,



David R. Hopkins
Chief, EIS Branch





THE CAPITOL

JACKSON

BILL WALLER
GOVERNOR

April 1, 1975

Mr. W. L. Heard
State Conservationist
USDA, Soil Conservation Service
Post Office Box 610
Jackson, Mississippi 39205

Dear Mr. Heard:

All concerned State agencies have reviewed the Watershed Work Plan and Draft Environmental Impact Statement for Watershed Protection, Flood Prevention, Agricultural Water Management and Other Beneficial Purposes; Mantachie, Bogue Fala, and Bogue Eucuba Creeks Watershed; Itawamba, Lee and Monroe Counties. All of the agencies approved the work plan as presented.

The Soil Conservation Service is to be commended for working with the four sponsoring local organizations to address the problems of land treatment, flood water control, and recreation including wildlife management.

I will follow with interest the progress of this project.

Sincerely,

Bill Waller
BILL WALLER
GOVERNOR

State of Mississippi



BOARD OF WATER COMMISSIONERS

416 NORTH STATE STREET
JACKSON, MISSISSIPPI 39201

354-7238

March 25, 1975

Mr. Edward A. May, Jr.
Assistant to the Coordinator
Federal-State Programs
Suite 400, Watkins Building
510 George Street
Jackson, Mississippi 39202

Subject: Watershed Work Plan and Draft Environmental
Impact Statement for Mantachie, Bogue Fala,
and Bogue Eucuba Creeks: Itawamba, Lee, and
Monroe Counties, Mississippi

Dear Mr. May:

Enclosed herein for A-95 clearance is the
summary review of the above captioned Watershed Work Plan
and EIS.

Sincerely,

MISSISSIPPI BOARD OF WATER COMMISSIONERS

A handwritten signature in cursive ink, appearing to read "Jack W. Pepper".

Jack W. Pepper
State Water Engineer

JWP:mmb
Encl.



STATE OF MISSISSIPPI
OFFICE OF THE GOVERNOR

WILLIAM L. WALLER
GOVERNOR

WM. M. HEADRICK
COORDINATOR OF FEDERAL-STATE PROGRAMS

STATE CLEARINGHOUSE FOR FEDERAL PROGRAMS

TO: Mr. W. L. Heard
State Conservationist
USDA, Soil Conservation Service
Post Office Box 610
Jackson, Mississippi 39205

State Clearinghouse Number
75020601

Date: March 27, 1975

PROJECT DESCRIPTION: Draft Environmental Impact Statement and Watershed Work Plan for Watershed Protection, Flood Prevention, Agricultural Water Management and Other Beneficial Purposes; Mantachie, Bogue Fala, and Bogue Eucuba Creeks Watershed; Itawamba, Lee, and Monroe Counties, Mississippi.

- (x) 1. The State Clearinghouse has received notification of intent to apply for Federal assistance as described above.
- (--) 2. The State Clearinghouse has reviewed the application(s) for Federal assistance described above.
- (--) 3. After proper notification, no State agency has expressed an interest in conferring with the applicant(s) or commenting on the proposed project.
- (--) 4. The proposed project is: () consistent () inconsistent with an applicable State plan for Mississippi.
- (x) 5. Although there is no applicable State plan for Mississippi, the proposed project appears to be: (x) consistent () inconsistent with present State goals and policies.

COMMENTS: The attached letter with enclosures from the Mississippi Board of Water Commissioners is made a part of this Final Clearinghouse action.

This notice constitutes FINAL STATE CLEARINGHOUSE REVIEW AND COMMENT. The requirements of U.S. Office of Management and Budget Circular No. A-95 have been met at the State level.

cc: Three Rivers P & DD

A handwritten signature in black ink, appearing to read "Edward A. May, Jr." followed by "Clearinghouse Director".





ALTON B. COBB, M.D., M.P.H.
STATE HEALTH OFFICER

MISSISSIPPI
STATE BOARD OF HEALTH

2423 NORTH STATE STREET, P. O. BOX 1700
JACKSON, MISSISSIPPI 39205

April 29, 1975

DRY 6 1975

S. SD. GE WATER 6

Mr. John E. Brown
Mississippi Board of Water Commissioners
416 North State Street
Jackson, Mississippi 39201

Dear Mr. Brown:

Re: Draft Environmental Impact Statement and
Watershed Work Plan, Mantachie, Bogue
Fala, and Bogue Eucuba Creeks Watershed,
Itawamba, Lee, and Monroe Counties

We have received and reviewed the above documents concerning
projects in Itawamba, Lee, and Monroe Counties.

On all impoundments provisions should be made to allow
fluctuating the water levels for mosquito control purposes.
We are particularly concerned about the two multi-purpose
structures No. 5R and No. 11R since there are indications that
these will be used for water contact recreation. The Itawamba
County Board of Supervisors and other local sponsoring organizations
should make adequate provisions to prevent pollution of these two
lakes by runoff from developments constructed in the watersheds.

If you or any of the other agencies involved have a question
concerning these comments, please let us know.

Very truly yours,

B. R. Redding

B. R. Redding, P. E.
Assistant Chief
Bureau of Environmental Health

ERR/mb

CC Mr. Stanley J. Spradling



BOARD OF WATER COMMISSIONERS

416 NORTH STATE STREET

JACKSON, MISSISSIPPI 39201

354-7236

March 25, 1975

Mr. W. L. Heard
State Conservationist
U.S.D.A. Soil Conservation Service
Post Office Box 610
Jackson, Mississippi 39205

Subject: Watershed Work Plan and Draft Environmental
Impact Statement for Mantachie, Bogue Fala,
and Bogue Eucuba Creeks: Itawamba, Lee, and
Monroe Counties, Mississippi

Dear Mr. Heard:

The above captioned Watershed Work Plan and EIS
have been circulated among appropriate agencies of the
State of Mississippi. Written responses are attached for
your records.

No objections were brought out by this review
as to the necessity or the benefits provided by the plan.

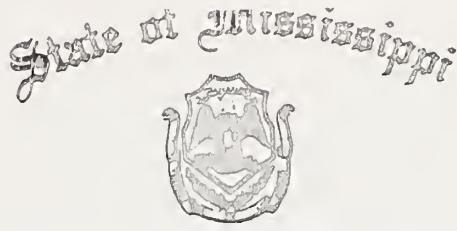
Sincerely,

MISSISSIPPI BOARD OF WATER COMMISSIONERS

A handwritten signature in cursive ink that appears to read "Jack W. Pepper".

Jack W. Pepper
State Water Engineer

JWP:mmb
Encls.



BOARD OF WATER COMMISSIONERS
416 NORTH STATE STREET
JACKSON, MISSISSIPPI 39201
354-7236

February 14, 1975

INTER-OFFICE MEMORANDUM

SUBJECT: Watershed Work Plan and Draft Environmental Impact Statement for Mantachie, Bogue Fala, and Bogue Eucuba Creeks: Itawamba, Lee, and Monroe Counties, Mississippi

I have reviewed the above captioned material and found the project acceptable except for a few general statements.

1. Page 28, paragraph 3

The opening sentence tells how 79 farm ponds and the desilting basins will add to the fishery habitat and provide wildlife habitat around the edges of these bodies. However, will these private ponds be open to the public and will they be properly managed?

2. Page 28, paragraph 3

The only land set aside for wildlife to replace habitat lost to the projects are private lands, as stated in paragraph 3, page 2. Is there a planned on-going program to provide economic incentive to these private landowners to continue their conservation efforts?

3. Page 30, item I, and page 31, item D.

These general statements are true. However, the question, "What is the net effect on total feeding acres for

2/14/75

-2-

waterfowl due to the loss of flooded bottomland and the feeding acres afforded by the 983 acres of surface water?" needs to be answered.

MISSISSIPPI BOARD OF WATER COMMISSIONERS

Larry J. Marble

Larry Marble

LM:mm

Game and Fish Commission

STATE OF MISSISSIPPI

P. O. BOX 451 • PHONE 354-7333 • JACKSON, MISSISSIPPI 39205

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WILLIAM LOWE WALLER
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WILLIAM WINTER
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DEKALB

SAM V. MORSE
GULFPORT

JOE L. TENNYSON
CHARLESTON

J. E. WOLFE
CLEVELAND

February 13, 1975

Board of Water Commissioners
416 North State Street
Jackson, Mississippi
39201

Gentlemen:

We have reviewed the Draft Environmental Impact statement on Mantachie, Bogue Falaya, and Bogue Eucula Creeks, dated December 1974, and do not wish to make any comments on it.

Very truly yours,

A handwritten signature in cursive ink, appearing to read "Barry Freeman".

Barry Freeman
Chief of Fisheries

BF:nj

MISSISSIPPI STATE HIGHWAY DEPARTMENT

P. O Box 1850 Jackson, Mississippi 39205

February 13, 1975

Reply To

Mr. Jack W. Pepper
Water Engineer
Board of Water Commissioners
416 North State Street
Jackson, Mississippi 39201

RE: Watershed Work Plan and Draft Environmental Impact Statement for Mantachie, Bogue Fala, and Bogue Eucuba Creeks: Itawamba, Lee, and Monroe Counties, Mississippi
December 1974

Dear Mr. Pepper:

We have reviewed the Watershed Work Plan and Draft Environmental Impact Statement for Mantachie, Bogue Fala, and Bogue Eucuba Creeks and following are our comments.

It is noted that structural measures include the construction of 12 retarding structures and 2 multiple-purpose structures. Highways located within this watershed should benefit by the changes in runoff effected by those structures. The work plan indicates a reduction in stage and discharge for floods of magnitudes up to the 100 year storm for Mantachie Creek at U. S. 78, S.R. 371 and S.R. 363; Bogue Fala Creek at U.S. 78 and S.R. 371; and Bogue Eucuba Creek at U.S. 78 and S.R. 371.

Thank you for this opportunity to review the Work Plan and Environmental Impact Statement.

Sincerely yours,

E. L. Boteler

E. L. Boteler
Director

JDW/vg

cc: Central File
Bridge File



Bureau of Outdoor Recreation Mississippi Park Commission

PHONE 354-6338 • 2304 RIVERSIDE DR. • JACKSON, MISS 39202

A Year Round Vacation Land for Family Fun

RAE SANDERS
Liaison Officer

April 22, 1975

Mr. James T. Jenkins
Staff Leader
Watershed Planning Staff
U. S. Dept. of Agriculture
Soil Conservation Service
Jackson, Mississippi

Dear Mr. Jenkins:

Let me take this opportunity to thank you and the Soil Conservation Service for the cooperative attitude you have shown toward the Statewide Outdoor Recreation Plan. We feel very strongly about the importance of the Mississippi SCORP and the benefits that our State can derive from such a document, providing it is adhered to and used properly. We also know that the SCORP is only as good as the input received from all Federal, State, and local agencies dealing with outdoor recreation.

In preparing the 1976 SCORP, we will solicit your input in order to assure you that the Soil Conservation Service will have a say in the recreational future of the State of Mississippi.

In response to your letter of April 16, 1975, the Okatoma Creek Watershed, the Mantachie Watershed, and the proposed Kemper County lake projects are all in accordance with the Statewide Comprehensive Outdoor Recreation Plan. Thank you again for your cooperation.

Sincerely,

Rae Sanders
Outdoor Recreation Director

RS:djw

cc: Mr. W. L. Heard

Robert A. (Bob) Ashley
Hazlehurst
Larry Broadhead
Mendenhall
Mrs. Theresa Duckworth
Aberdeen
Cary Embrey
Coldwater
Wiley Fairchild
Hattiesburg
Perry F. Gibson
Waveland
Gary Hawkins
Calhoun City
Dr. Bobby F. King
Iuka
Joe P. Tubb
Jackson

